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SOUTHERN
TEXTILE BULLETIN

VOL. 29 CHARLOTTE, N. C., THURSDAY, JANUARY 21, 1926 NUMBER 21

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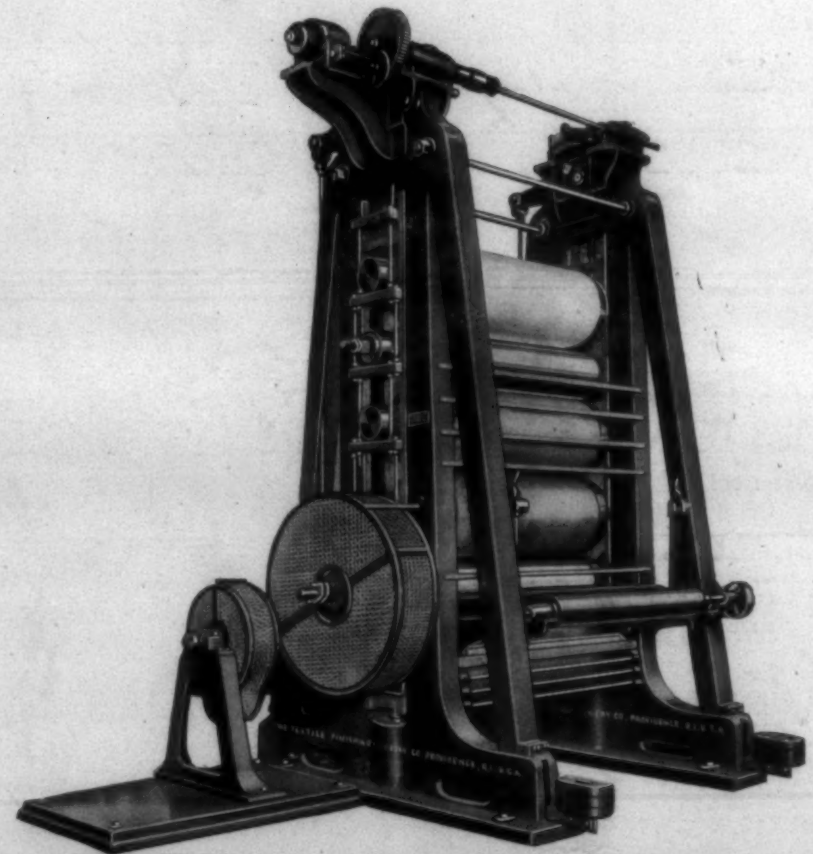

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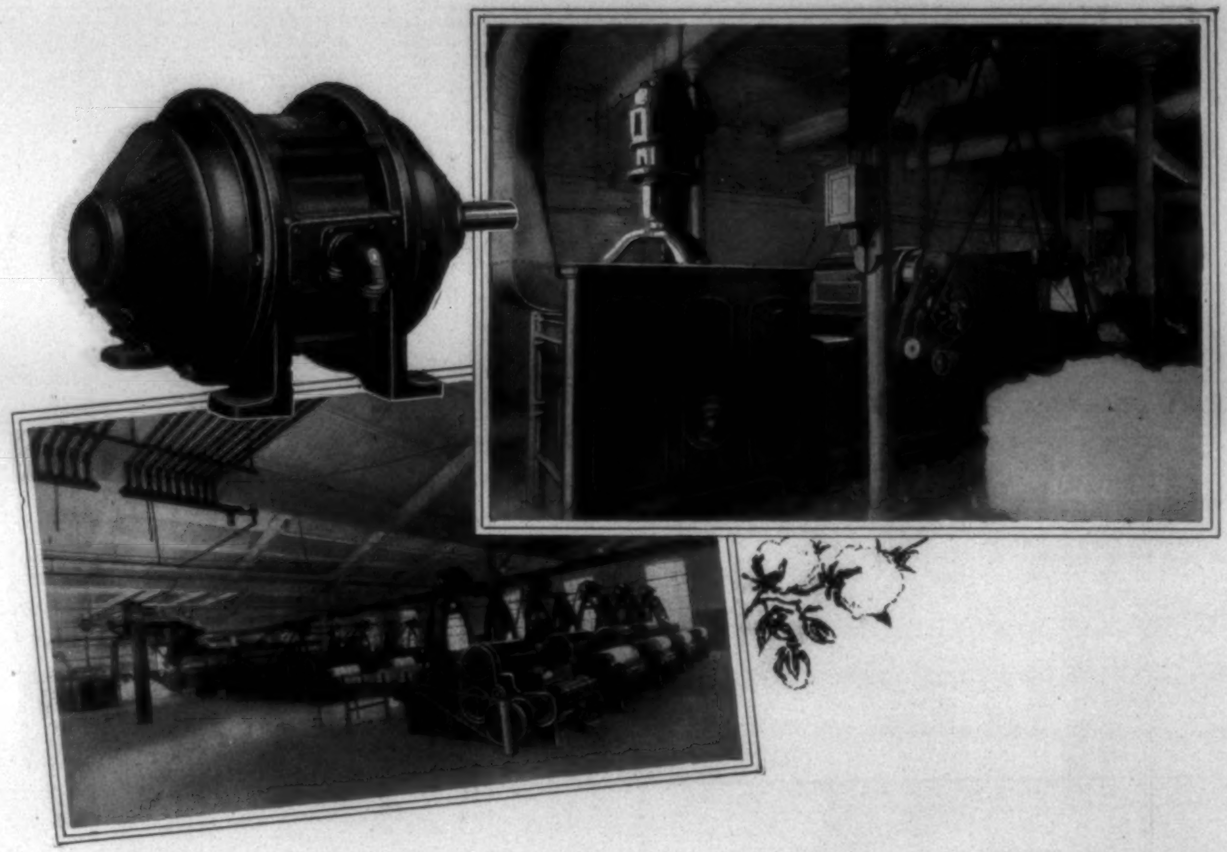

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SOUTHERN
TEXTILE BULLETIN

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VOL. 29 CHARLOTTE, N. C., THURSDAY, JANUARY 21, 1926 NUMBER 21

Important Properties Of Rayon

Address by Dr. M. G. Luft, of the Industrial Fibre Co., Before the American Chemical Society

OF great importance in the use of rayon is the strength of the fibre, which is expressed by the tenacity and elongation of the yarn. By tenacity or tensile longitudinal stress the yarn can bear without tearing expressed in grams per denier.

By denier, we understand the relation between the length and weight of silk yarn, the definition of denier being used for both silk and rayon. The most common counts of rayon are 150 and 300 denier, 150 denier meaning that the weight of 10,000 yards of yards is 150 grams, and accordingly 300 denier weighs 300 grams per 10,000 yard length.

The tensile strength of uniform yarn ought to be constant in each length of the same denier. The elongation is the total strength per unit of length produced by a tensile force, and is expressed in percentage.

Grames per Denier

	Dry-Tenacity	Wet-Tenacity	Elongation
Copper Silk	1.3	0.5	12.5%
Nitro Silk	1.48	0.31	15.5%
Viscose Silk	1.75	0.75	20.0%
Natural Silk	2.5	2.0	21.0%

	Absolute Resistance in kg. per sq. meter	
Fibres	Dry Thread	Wet Thread
Weighted Natural Silk	20.0	15.0
Raw Silk	50.0	41.0
Collodion Silk	17.0	4.3
Copper Silk	19.1	3.5
Viscose Silk	21.5	3.5
Cotton	11.5	18.6

Diameters of Different Fibres

Wool—ranging from	.0005 to .002"
Cotton—ranging from	.0004 to .001"
Silk—about	.0007"
Rayon—about	.0018"

The tensile strength of artificial fibre can be increased by the application of diluted acids in the presence of air moisture, but the best way to obtain good strength and better resistance to liquids is by imparting a uniform twist to the filaments. The same denier can be spun with a greater or less number of filaments, more fibres giving to the yarn higher tenacity and less elongation per denier. At the same time, the feel becomes softer due to the fineness of the individual filaments. Some kinds of rayon are spun today as fine or finer than cocoon fibre, having 3 denier per filament. The specific gravity of cellulose rayon is 1.5; and that of silk, 1.4. The cross section of viscose rayon observed under the miscroscope shows corrugations similar to the bark of a tree, and the individual filaments interlock due to this corrugation, the result being greater strength, covering power, and lustre. The cross section of acetate and cuprammonium show no corrugation, the first being more oval and the latter one round and of uniform diameter. The nitrocellulose is more oval than viscose and shows only slight corrugations.

The higher the relative humidity in the atmosphere, the lower the tenacity and the higher the elongation of the same thread. There is a rather constant ratio between tenacity and elongation in relation to the moisture content.

Rayon loses strength when in a wet state because it absorbs readily about three parts of water to one part of dry product, increasing in volume at the same time by about 40 per cent. When dried, it contracts and regains its previous volume and tensile strength. This absorbing and giving off of water is due to the capillary structure of the cellulose fibre.

In practice, the moistening of rayon has no influence on the quality of the product, as the resistance is increased by the higher amount of turns per inch given to the yarn in the twisting process. If textile products of still greater strength are required, rayon is mixed with cotton yarn or silk, and the largest amount of this fibre is used today in mixtures with other yarns.

There are also different methods described in literature concerning water-proofing of artificial silk. One of them is known under the name of athenose, and consists of treating yarn with formaldehyde and lactic acid. The silk becomes more waterproof, but at the same time hard; and its affinity to certain dyestuffs is decreased. There are other methods known of waterproofing, if I may mention my process based on treatment of viscose silk with aluminum acetate during the desulphurization. The problem of waterproofing rayon is of foremost importance and may revolutionize the industry if the right solution is found. At the present time it is an important part of our research program.

The great power of absorption of moisture is an advantage to rayon, because when used for underwear, it absorbs the perspiration from the body and permits the evaporation of the excess moisture, keeping the skin dry and comfortable. This hygienic property has but recently been recognized to be a great advantage, and rayon combined with cotton or silk is used more and more as an ideal yarn for shirts and underwear.

It has still another advantage in that rayon remains white when in contact with perspiration, while silk is generally weighted with metallic salts, usually tin salts—in some instances black fabrics are weighted up to 300 per cent of the original weight of the yarn—and this content of foreign matters makes silk brittle and is not conductive to good halth. Rayon is never weighted; it is a pure cellulose product and has no injurious effect on the skin.

From a hygienic standpoint, it is important to mention that some kinds of cellulose products, like the acetyl cellulose, are immune against bacteria. Other kinds of textile yarns, like cotton, are affected in the presence of moisture by mildew and by mucor aspergillus, which produces pink stains on cotton fabrics. There are no known defects due to bacteria on artificial yarns.

Some authorities claim also that rayon, especially the actyl cellulose variety, is transparent to ultra-violet rays, which penetrate the body without being broken up by the reflection as is the case with other textiles. This claim has not qet been sufficiently proved.

For special textile purposes, as for warp in weaving, rayon is covered with starch, gelatine or soluble gum, a process called sizing of warp. The sizing is made for the purpose of protecting the yarn stretched in the loom against the friction of the reed and the movement of the harness in th looms when woven into fabrics.

Another important property of rayon is its lustre. From the point of glossiness and brightness, rayon surpasses silk and all other fibres. It is more lustrous because the individual filaments are more flat than silk, and accordingly expose a greater light-reflecting surface. Silk fibres are nearly cylindrical, and reflect a relatively small amount of light. If less gloss is required, more twist can be inserted in the rayon yarn, the result being a mild lustre, similar to silk. Different kinds of rayon have not the same lustre. The nitro product is shiny, and the copper glassy, while the viscose and acetate cellulose are silvery, more in the nature of real silk.

The feel of rayon is similar to silk, but slightly colder and harsher to the touch. The scroop of natural silk can be reproduced by passing the finished yarn through a weak solution of acetic, trataric, or lactic acid.

Production Positive.

Rayon, being a synthetic product, has a big advantage over natural fibres in that the cotton and silk supply are regulated almost entirely by cheap labor and natural forces which are beyond the control of man. Cotton crops are often destroyed by the boll weevil. We cannot stop it; and we cannot control natural forces such as rainfall, which affect the production of raw cotton, silk, and other natural fibres. Rayon is not subject to changing or unfavorable conditions, and there is no boll weevil which can cause damage and shortage. The farming and crop of artificial silk is determined entirely by chemical research and organization of production.

A stimulus to the application of rayon in a supplementary way with plain and mercerized cotton yarns or with wool and silk is the uniformly low price of the fibre. Its freedom from irregularity in price has done a great deal to increase its demand. It is not affected by labor or political conditions, by money exchange value, or by crop. For these reasons it enables the manufacturer to quote his price and figure his profit in advance, this sound price regulation being an important factor in any economic progress. A good quality of cotton yarns costs about 80 cents per pound; woolen yarns cost from $1 up to $1.50 per pound; silk, $6 to $8; and rayon, $1.50 to $2. These figures indicate the small dif-

(Continued on Page 34)

Some Recent Comment on Editorials

Fancy Weavers

The following letter to David Clark, editor of the Southern Textile Bulletin, comes from an overseer of long experience and the statements he makes are worthy of careful consideration. It says:

"After reading over the current issue of the Southern Textile Bulletin, I want to write you to show that some of your readers appreciate the stand you take for Southern mill people.

I am 47 years old. My father died when I was a little more than 7 years of age, leaving two daughters and myself with a widowed mother to care for. So I went to work in a mill, the only one in the South at that time that had made any attempt at fancy weaving. With what little schooling I have had, I have managed to get along. I have held some positions where I was over college graduates. So mill people are not so feeble minded and now, we have so much better facilities for our children that I am indeed proud that I am a North Carolinian. I had much rather have my boys and girls raised up in the good old North State than anywhere else I know of, and I have seen quite a bit of our country. So much for that.

"Now for the editorial in which you referred to mill men being qualified to handle fancy weaving. As stated before, I went to work for the first mill to make any attempt at fancy weaving in the South. I have grown up with this mill. Thirty years ago, or more, we were making a fancy weave on 20 harnesses, using an old witch-top loom. Then later we had a cashmere head, then later dobby and leno, with a latchet attachment. I often feel that some mill owners believe that some young fellow who can sit at a desk and do wonders with figures and drafting, but who will make about as much waste as he makes goods, is more fitted for running a mill than some of us old timers who got what we know by hard work, but with the knowledge that we could not afford to make waste.

"I know a mill in North Carolina right now that has for a superintendent, a man who is considered a wonder by some people. As a matter of fact the mill makes enough waste in the slasher room over and above what should be made, to take care of the pay roll in that department. This same mill of over 1,000 looms makes fifty per cent more waste in the filling for automatic looms than should be made. If they would have it properly bunched at the start of the bobbin and see that the feelers are set right, their waste could be reduced. Almost anyone can see a leak if it is big enough, but few can keep after the little things that in the final outcome cause a deficit instead of a dividend.

"Mr. Clark, I know of other mills that have specialized on fancies and two of them I particularly have in mind just at this time. One of them which was recently sold, lost money by having men operating it that did not understand the making of fancy goods. Both of these mills used men who did not have the practical experience. Take a weaver who has charge of a mill on plain coarse goods, using low grade cotton and cheap dyes, if he has quite a lot of waste he does not notice it, as his materials did not cost so much. Then put him on a fancy job where he uses high price materials and his waste problem will not worry him very much until he has lost a lot of money in letting too much silk and rayon at $4 to $5 a pound and upward get away from him in waste.

"I could sit here and tell you ways without end through which mills made waste that could be avoided and which is not made at the mill where I got my experience. I would like to give one example in a weave room where 1,000 loom warps ran eight weeks, average warp tied in 1.25 per week, loom fixer cuts out warp with 1¾ to 2½ yards more yarn on beam than can be made into good cloth, brings up his new warp tears down ¼ yard of cloth on loom to tie in to. This cloth sells for 25 cents per yard at the mill. He has wasted enough to pay a high priced overseer's wages for the week."

The following letter to David Clark, editor, has been received from a very prominent and successful South Carolina mill superintendent:

"I have to thank you for your editorial on the 14th on fancy weaves, the mills should take notice and also thank you. I had charge of over four thousand looms up North and most of these on silks and cotton stuffs. My looms were jacquard, box and fancy sateen and plain goods and never did I have an overseer of weaving that could make out inch of a design of any kind. What we wanted as overseer of weaving was the best manager we could find. We found and all New England found was that a so-called fancy weaver fooled his time around sitting at his desk and making a bluff at making designs where his time should be used in getting production and quality. He is also of more value as his mind is on one thing, production. On my travels through Europe this summer I called on a school boy friend of mine, he has charge of twelve thousand five hundred loms in England and Scotland, mostly on rayon and cotton. His sytem is very much like some of the New Bedford mills, has has at his desk, his cost finder, when an inquiry comes in for a new fabric and they want a price. He hands the sample to his cost finder who is also his head designer and in fifteen minutes he wires his price subject to his figures being proved after weaving fifty yards.

"Before sample is put in loom each kind of yarn in sample to make fifty yards is weighed. I like the Scotch and English method of giving out the filling, they have one girl who gives one hundred bobbins in a box of silk filling to a weaver at one time and they bring back the one hundred empty bobbins. She looks in her book and finds if the hundred empty bobbins is the same as she gave out full.

"I think that system is very necessary in this part of the world, there is rarely a weaver who applies for work that comes from a mill, using silk filling who has not a few bobbin of silk with him.

"I found in my travels through Europe not one superintendent of a cotton mill who was brought up in a weave room. They want either an overseer of carding or spinning. They claim they don't want a superintendent that can only correct things when they go wrong, but want one who can detect and prevent things from going wrong. You know Mr. Clark I detest publicity, I just hate to write this letter but I appreciated yours so much I just had to answer you. Always keep my my name out of anything of this kind."

Injustice Done Mill Owners

(Biblical Recorder)

In November issue of Home and Foreign Fields there was a play written by Mrs. Moffet Rhodes ,who undertakes to describes conditions in cotton mills of the South. The editor of this paper did not notice this play when published, and did not know that it had been published until he received a letter from a friend containing a clipping from the Southern Textile Bulletin, published in Charlotte, calling attention to the publication, and protesting against the grievous wrong done the owners of cotton mills in the South.

The statement is made in the play that children ten and twelve years of age work in the coton mills, while, as the editor of the Textile Bulletin shows, no child in the United States can be employed who is under fourteen year of age. It is stated further that children work for two dollars a week; that they sometimes get their arms cut off in the machinery; that the mills are damp, and children forced to work in the damp mills often contract tuberculosis, and much more to the same effect.

We looked up the November number of Home and Foreign Fields and read the article with surprise and regret. It reminded us very strikingly of communications in metropolitan magazines written by Northern correspondents about conditions among the "Mountain Whites.'

We are glad to note that Dr. Dobbins, editor of Home and Foreign Fields, apologizes, in the January number, for the publication of the play, and so far as he can do so, makes amends for any injustice that may have been done the mill owners. This writer is well acquainted with conditions in the cotton mills of this State. His first pastorate was in a cotton mill town, and when in Greensboro he was in the midst of one of the great industrial centers of the State. While Secretary he visited many cotton mill communities. He knows that many of the children in the mills in these places are in far better condition than they were out in the country before their families moved to cotton mills.

In another column we are publishing an editorial which appeared in a recent issue of the Baptist Courier. We heartily agree with Dr. Cody, and can truly say that the conditions which he describes in South Carolina obtain in the cotton mills of this State.

In a strong editorial on this subject, Mr. Richmond H. Edmonds, in the Manufacturers' Record, says that most of the improvements in cotton mills have been inaugurated voluntarily by the owners of the mill. As Mr. Edmonds says, mill owners provide schools and places of worship, if the denominations do not provide the latter. Many of the owners are devout Christians and worship with the operatives in their mills. We should be grateful for the excellent conditions that prevail in our industrial centers, and should not accept the statements made by propagandists as to the cruelty shown the children who work in these mills.

While the publication of the play is to be regretted, we trust the owners of our cotton mills will accept in good faith the explanation by Dr. Dobbins in the current issue of the mission magazine, and we can assure them that Dr. Dobbins would not intentionally do an injustice to any class of people.

An Inadvertent Injustice

(Baptist Courier)

We call special attention to an editorial from Southern Textile Bulletin published in another part of this issue, entitled "Vicious Propaganda." It is, we must say, a great mortification to us to read such a protest from such a source. It would be otherwise if we could only add that it was unjust or uncalled for. But—. Yet, we know that the viciousness is not the part of those who edit and publish Home and Foreign Fields.

What we cannot account for is how such an article ever got into Home and Foreign Fields. Those who are responsible for that journal are not only among our best, but are also among our wisest and most intelligent Southern leaders. They are the very furtherest, mentally, socially, industriously, economically, sectionally, politically, religiously and every other possible way, from sources that would put over a "vicious propaganda" against a great Southern industrial life. And yet here is this unusually adroit article found in Home and Foreign Fields!

Does it represent a grain of truth? Is there a single Southern State where such conditions prevail in the mills? Is there one mill anywhere in the land of which such a picture could be drawn? Of course, our knowledge of all the South is not

(Continued on Page 33)

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ARCY is a product used in warp sizing and cloth finishing for converting ordinary thick boiling pearl starch into a soluble form, the solutions of which are transparent, and remain fluid at lower temperatures. The active principle of ARCY is of French origin and has been used successfully in Europe for some time, more particularly in France, Germany, and England.

There are many kinds of diastases which convert starch, but which have no value in textile mill use in preparing starch mixes, because they will carry the conversion into sugars, to the utter destruction of the desirable properties of the starch. *ARCY does not contain malt diastase, nor other similar diastases which produce sugars* in the size kettle. Herein lies ARCY'S extreme value to the Textile Trade.

ARCY is not supposed to replace the usual softeners used in the size mix, but when used with ordinary thick boiling pearl starch in the proportion of approximately 4% of the weight of the starch, completely liquefies the starch, producing practically a non-congealing thin size solution, with marked penetrating and binding properties.

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Less shedding of short fibres, due to the conservation of all binding properties of natural thick boiling starch. ARCY liquefaction of natural starch is *NATURE'S* mild way of producing slow congealing starch solutions, without lessening the original desirable properties created by *nature*. Hence the ability of the dressed warp yarns to withstand the chafing action of the reed without "shedding."

No lumps in the size box nor in the pipe lines. Each granulte of starch is converted in the cooking kettle into slow congealing liquid.

Increased tensile strength. Owing to its greater penetrating power the internal fibres are cemented together, producing a composite thread, reducing stoppage of the loom to a minimum.

Superior Bleaching noted at the finishing works, due to the soluble nature of the starch, enhancing kier action, producing better "bottom" and clearer whites.

Maximum life to cotton harnesses.

Smooth finish. The yarn is smooth and does not have a sawtooth feel, because the starch has been completely liquefied.

Minimum stoppage of the loom due to knots breaking the companion thread when weaving. Also the smooth surface of the warp yarns prevent the threads from hanging together in the shed, where the shuttle breaks them.

Less "net" waste where the mill desires to take advantage of the possibilities of using starch mixes of greater degrees of concentration.

Last but not least, the considerable saving to the mill in the purchase of all starch used.

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Southern Mills Using Celanese

THE possibilities of employing Celanese yarns in their production is becoming more and more apparent to a large number of cotton and knitting mills in the South. Many of the mills are now making extensive use of these yarns and are marketing their products with marked success. From the results already obtained and the fact that Celanese is adaptable in producing fabrics for an almost endless variety of uses, it is apparent that its use will steadily become more general in the South.

The diversity of the application of Celanese yarns is one of their most outstanding characteristics. They are being used for satins, taffetas, radiums, pongees and foulards; for the sheerest of chiffons and for very artistic draperies. For cloths where construction requires yarn of very high twist, such as crepe de chine and moracain, the elasticity of Celanese makes it highly desirable. Celanese is now being employed in making almost every kind of fabric, ranging from hosiery to hat trimmings, from sport dresses to the daintiest lingerie.

Fabrics made from Celanese yarns are remarkable for their beauty of construction, lustre and color possibilities. They have the sheen, the lustre and "feel" of finest silks and lose none of these properties through constant washing. Their draping qualities are exceedingly good.

The following examples of the use of Celanese yarns by Southern mills are cited here simply to illustrate the progress that has been made in the use of these yarns and to show how some of the mills are successfully producing both cotton and Celanese mixed fabrics as well as the all-Celanese cloths. The several samples described are referred to only because they are good examples of what some of the mills are doing with Celanese.

A Southern mill making towels is achieving a remarkably beautiful effect by using Celanese for fancy borders. The body of the towel is the usual weave, Celanese filling in several colors being used for the border decoration.

Another mill is producing a very attractive and successful line of drapery cloths with cotton warp and Celanese filling, with alternate horizontal sateen stripes. The construction of these fabrics makes them naturally reversible, the stripe giving one effect on one side of the goods and another effect on the opposite side. When piece dyed, this alternate reversible stripe gives a very beautiful two-color effect. This same fabric, woven with an alternate checkered effect, when cross dyed, gives a very effective two-color checkered effect.

Several Southern mills are now weaving all-Celanese fabrics, such as voiles and crepe de chines, from high twist Celanese yarns, the twist running as high as 30 to 40 turns per inch in both warp and filling. These all-Celanese crepe de chines, voiles, georgettes, sateens and other fabrics, are especially adaptable to ladies' evening dresses, as they are not discolored by perspiration. They thus overcome one of the objections to pure silk fabrics which are usually dyed with acid colors that are sensitive to perspiration.

The Southern knitting mills that are using Celanese yarns are producing a wide range of beautiful hosiery. One mill is making all-Celanese full fashioned hosiery that is practically identical in all respects with pure silk. It is interesting to note in knitting full fashioned all-Celanese hose that the Celanese yarns can be knitted in the wet state, exactly as pure silk is knitted, thus doing away with the necessity of making machinery changes when adopting Celanese.

Another hosiery mill is producing a very attractive line by using single carded cotton yarns with Celanese, twisting one thread of cotton with one thread of Celanese, producing an even heather effect. This can be changed to a variable heather effect by running both threads in at random.

The horizontal and vertical striped hosiery, popularized by Ipswich, is now being made in a number of Southern knitting mills.

Samples from another hosiery mill show that by using Celanese, rayon and cotton, they are producing a very pretty line of hosiery in a three-shade effect. The Celanese, rayon and cotton combine to give a three-shade effect that is very effective and popular.

Men's and women's golf hose, from single cotton yarn and Celanese, twisted end for end and knitted together in an even heather effect, are being made at one Southern mill. The hose are dyed in one bath, giving a two-color effect or the cotton is dyed and the Celanese left white.

The manufacturers of Celanese, in describing their product, point out that, while Celanese closely resembles real silk, it has several properties which silk does not have and which are peculiar to this fibre alone. They also stress the fact that Celanese is not rayon, although both are synthetic fibres. In both physical and chemical properties and in process of manufacture, Celanese differs materially from rayon. It has high tensile strength and elasticity both in the dry and wet state. It is waterproof and practically wrinkleproof. This imperviousness to water, however, is not objectionable for underwear and other garment purposes, but is an advantage in that

(Continued on Page 35)

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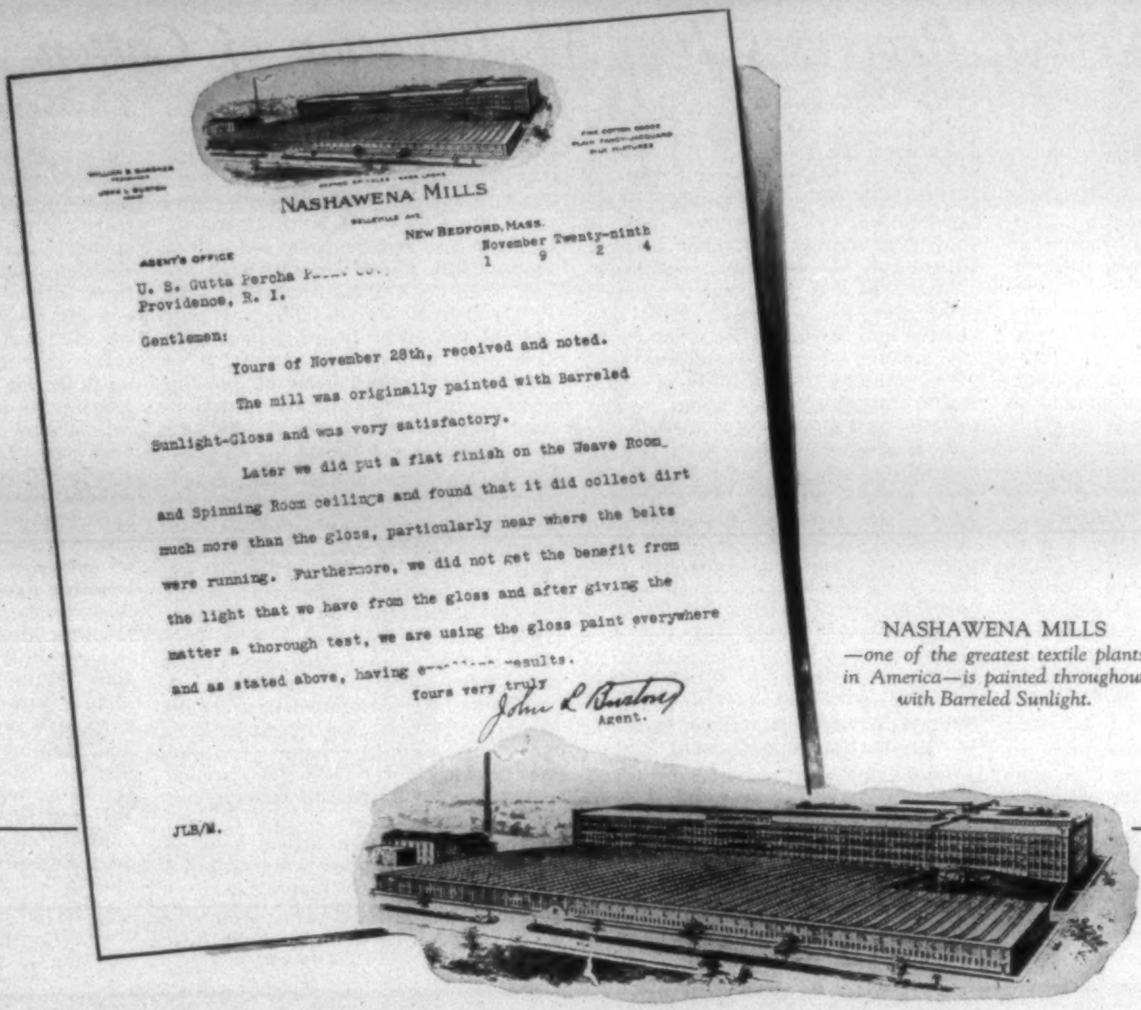

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AGENT'S OFFICE

November Twenty-ninth
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Yours of November 28th, received and noted.

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Some Newer Processes For Modification of Cotton Fabrics

APART from the now well-known processes of treating cotton materials with strong alkali, or with strong mineral acid singly, these newer ones are based upon the combination of these treatments, in one order or another, for the production of special effects. These newer processes are reviewed by Dr. Schwarz in a lengthy contribution to the "Leip. Monat. Tex.-Ind.," in the course of which the author refers to the process depending upon the employment of sulphuric acid at a strength of 90 to 120 deg. Tw. for the purpose of producing special effects by printing on cotton fabrics, plain or previously printed with resists. The portions of the fabric affected by the strong sulphuric acid become thinner and more transparent than the non-treated. Varied designs may be so produced, and still further varied by printing sulphuric acid 108 deg. Tw. on cotton material which has been previously mercerized with caustic soda (German patent 280134).

The last named process may be varied by printing sulphuric acid 108 deg. Tw., an alkali mercerized cotton fabric, and, after suitable, again mercerizing with alkali (American patent 1201961). It was recorded in the year 1844 that sulphuric acid of a strength ranging from 104 deg. to 125 deg. Tw. imparted to cotton a transparent parchment-like appearance. Acid at a strength below 90 deg. Tw. affects only the tinctorial properties of the cotton, not the appearance. It is remarkable the difference that is shown by strengths of acid varying within only narrow limits; sulphuric acid at 110 deg. Tw., when allowed to act for but one second, imparts a clearly defined transparent effect to the cotton, whereas sulphuric acid at 106 deg. Tw., when allowed to act for 15 minutes, brings about no apparent alteration. By previously mercerizing the cotton with alkali, and then treating with sulphuric acid under 110 deg. Tw., notable effects are obtainable, particularly on cotton that has first of all been previously bleached. Bleached cotton fabric mercerized with alkali, and then treated with sulphuric acid from 104 deg. to 108 deg. Tw., becomes thicker and fuller and much like a fine woolen fabric. This process may be applied to plain or figured fabrics and may be used for the production of patterned effects.

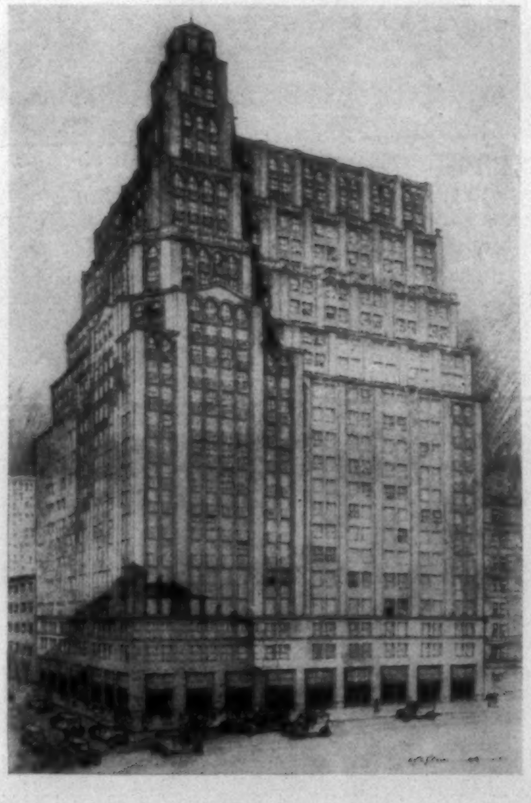
The printing of resists on alkali mercerized cotton previous to the treatment with strong sulphuric acid gives wool-like design effects, sharply standing out in comparison with the lustre of the mercerized cotton. In place of sulphuric acid 104 deg. to 108 deg. Tw., other acids may be used, suc has phosphoric acid 124 deg. to 130 deg. Tw.; concentrated hydrochloric acid; zinc chloride 168 deg. Tw. at 60 deg. to 70 deg. Cen.; or ammoniacal cupric oxide. The wool effect may also be produced by treating first with caustic soda, then mercerizing under tension with alkali, washing and then treating with the sulphuric acid. The process may be varied by treating first with acid and then with alkali, with or without the application of tension (American patent 1392264, and German patents 280444, 292213, 294571).

The process (German patent 280134) mentioned at the outset, claimed that by treating previously alkali mercerized cotton with sulphuric acid 108 deg. Tw., a transparent effect could be produced, whereas another (German patent 290444) states that by treating previously mercerized cotton with sulphuric acid at about 106 deg. Tw., a wool-like effect is produced. A similar effect is claimed in German patent 294571, by first treating cotton with sulphuric acid at about 106 deg. Tw., and then with strong caustic soda. The point brought out by this specification is that the influence of the sulphuric acid is more bitingly exerted when applied to cotton previously mercerized.

It is obvious that quite a variety of differing effects could be obtained on cotton fabrics by alternating and increasing the order and number of the treatments with strong acid and alkali, within limits. There is, of course, nothing to be gained by mercerizing a second time with strong alkali material already mercerized, nor by treating a second time with strong sulphuric material already so treated. Yet by alternating the order of treatment, for instance, by interposing a treatment with strong acid between the two treatments with strong alkali, or by interposing a treatment with alkali between the two treatments with strong alkali, or other variation, the effects obtainable may be correspondingly changed. In seeking, however, to produce a new effect, it is necessary that one of the two reacting agents should be applied at least twice, and the resulting effect is controlled according to whether the sulphuric acid or the caustic soda is the first or the last treatment respectively. With sulphuric acid at a concentration of 160 deg. Tw., applied as stated in the specification 290444, the wool effect is produced by treating first with alkali and then with acid. Sulphuric acid at strengths higher than 106 deg. Tw. produces the transparent effect.

It is not necessary that the acid

(Continued on Page 32)



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"Perhaps Carpenter is just a plain liar."

Then again some guy may say, "HOUGHTON'S WARP CONDITIONER is not the best."

He may be a competitor who honestly believes what he says.

He may be a chronic knocker who contradicts everyone on principle.

Or he may be just a plain liar who doesn't like me because I would not give him an advertisement, or do him some other favor.

Now between these two extremes the mill man must judge and I am most willing today to submit to the judgment of the mill men, as my Company has always been willing to submit to the verdict of the mill men in the 60 years in which it has catered to the mill men's patronage.

A New England textile publication may express itself as believing that the mill men are divided into two classes—crooks and ignoramuses—but I know better. If I don't know the mill men, after 45 years' experience in personal contact with them; coming as I do from a family of mill men; interested as I am financially in the textile industry, then I never will.

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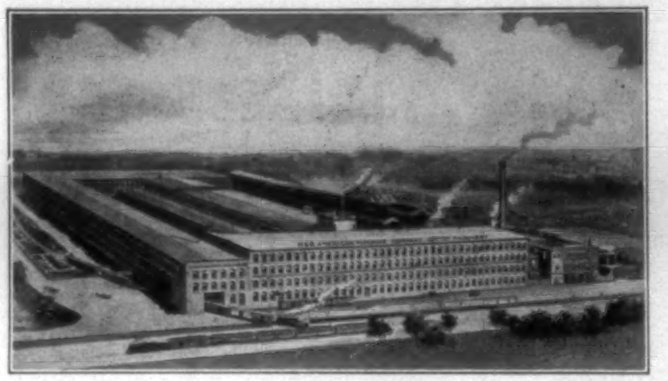

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Dyeing Rayon

IMMENSE quantities of artificial silk are dyed in the skein, being made use of in weaving and knitting a very wide variety of fabrics, from neck-tie material to dress goods and heavier fabrics for decorative purposes, according to an article in "Dyestuffs" the magazine of the National Aniline and Chemical Co.

Many dyers handling large quantities of artificial silk are frequently required to dye relatively small lots to match certain specified shades and for this purpose use is made of small dye kettles. In the choice of dye kettles for skein dyeing, preference is to be given to those that are made of metal on account of being smooth inside, and which are capable of being made absolutely clean, a condition that is not always possible with the usual wooden kettle. For large batches of artificial silk, preference is to be given to the well known type of revolving kettle, in which the skeins are caused to rotate at an even rate of speed in a fixed volume of dye liquor. At one time, dyeing artificial silk in this type of kettle was not thought possible but gradually dyers adopted this method of operating where they had the equipment, thereby greatly increasing thir output and producing satisfactory results.

Dyeing artificial silk offers no great difficulty although care is to be exercised in handling the skeins or fabric. In dyeing skeins in open kettles, it is to be remembered that the fibre is considerably weakened when in a wet state, and consequently will not bear rough usage. Unevenness in the dyed shades is one of the most serious troubles that the dyer has to contend with, but in recent years this trouble has been practically eliminated. The cause of unevenness was traced to two principal causes, first, irregularity in the composition of the artificial fibre substance, and second, a lack of exact knowledge on the part of the dyer as to the proper method of proceeding with the dye. Another cause of trouble was due to the improper selection of dyes. Now these troubles seldom occur, since there is greater uniformity in the fibre and since the dyeing processe have become thoroughly understood.

One of the most commonly employed artificial silks is known as Viscose and is dyed in the following manner:

The skeins are well wetted-out with water by hanging on smooth poles in an open kettle, when they are ready for immersing in the dye-bath which is prepared with a suitable quantity of Erie or Niagara dyed and Turkey Red Oil. For light shades, use from 1 to 3 per cent of Turkey Red Oil while for medium and heavy shades use 1 to 3 per cent of Turkey Red Oil and 5 to 20 per cent of Glauber's Salt Crystals. The dye should be previously dissolved and added to the bath in successive portions. The temperature is important. For light shades enter the skeins and work at 100° to 120° F. until the bath is exhausted. For heavy shades enter the skeins at 100° and gradually raise the temperature to 180°-190° F., turning slowly for about ¾ of an hour or until the bath exhausts.

The National Aniline and Chemical Co., recommends the following direct dyes for Viscose:

National Erie Yellow Y
National Erie Orange Y
National Erie Catechine 3G
National Erie Fast Orange A
National Erie Brown 3GN
National Fast Scarlet YA
National Erie Violet 3R
National Erie Fast Scarlet 8BA
National Erie Bordeaux B
National Niagara Sky Blue
National Niagara Blue 3B
National Erie Green MT
National Erie Black B Extra

For cetain purposes, Viscose is dyed with basic dyes, in which case the skeins are mordanted with tannic acid and fixed with tartar emetic in a manner similar to mordanting cotton. The bath is prepared with from 2 to 6 per cent of tannic acid and heated to 140° to 150° F. Keep the skeins immersed for 3 to 4 hours, lift, squeeze evenly and fix by passing for ½ hour through a cold fresh bath containing 1 to 3 per cent of tartar emetic or equivalent of soluble antimony salt. Finally rinse well. The dye-bath is prepared with the requisite amount of basic dye for the desired shade, together with 2 to 4 per cent acetic acid. The dye should be previously dissolved in warm water and added to the dye-bath through a strainer to avoid the possibility of specks. Dyeing commences cold and the skeins are worked until the bath is nearly exhausted, when the temperature is slowly raised to 120° F. and dyeing continued until is complete. Viscose artificial silk properly dyed in this manner will be level and in perfect condition.

National Aniline and Chemical Co. lists basic dyes that are extensively used for Viscose as follows:

National Auraline NAC
National Phosphine GN and 3RN
National Chrysoidine Y Extra
National Bismark Brown No. 53
National Rhodamine B
National Safranine A and 6B
National Fuchsine Pure Crystals
National Brilliant Green WB Crystals
National Victoria Green WB Crystals
National Methylene Blue 2B
National Methyl Violet 2B Conc. Crystals

Viscose may also be dyed with the sulphur colors in the same manner as for cotton but the temperature of the dye-bath should be maintained between 150° and 160° F. The dye-bath is prepared with

2% Soda Ash
3% Turkey Red Oil and according to shade up to
30% Glauber's Salt Crystals

The sulfur dye required is dissolved with an equal weight of sodium sulfide conc.

Tubize artificial silk is dyed with the Erie and Niagara dyes, preparing the dye-bath exactly as for Viscose (see above) and manipulating the skeins in the same manner.

(Continued on Page 31)

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Practical Discussions By Practical Men

Life of Twine Harness.

Editor:

I would like to ask a question through your Discussion Page. I want to know the life of twine harness on a 40-inch loom, using 14s warp and making 40-inch, 48x48, 2.85 shetings, sized about 8 per cent. The looms are equipped with single back stop motion, making 158 picks per minute.

I would like to hear from someone who knows from experience what the life of the harness should be.

G. B.

Is a Long Draft Practical?

Editor:

Having heard a great deal about operating spinning frames with a long draft, so called, I would like to know the ins and outs about this new system. May I ascertain through your columns something definite concerning this new system? I would like to hear from some overseer or superintendent, agent or manufacturer who knows from experience just how this works and the results pro and con. Mass.

Answer to Yarno.

Editor:

In answer to Yarno as to whether it pays to change spinning frames to twister frames, will say that it will depend on circumstances. In starting up a new mill it will be cheaper and better to buy regular twisters. If twisters are to be added to an old mill and there is plenty of time to get them from the builders, it will be better to have the machines made for the purpose.

However, if you have to fill a rush order and happen to have spinning frames to spare, it is fairly satisfactory to alter the spinning frames into twisters. I would not use the the leather covered top rolls. It will add much to the value of the altered frames to take out the middle steel rolls and then cut some 2 3-16-inch shafting into individual top rolls which will ride nicely and rest between the front and back lines of steel roils. This cuts down the expense of wearing down so many leather covered rolls. Twister.

Answer to Shareholder.

Editor:

Answering to Shareholder in regard to profit sharing, there are quite a few different systems. One large mill pays an annual bonus to all of the people employed by them to secure a higher efficiency. They have done this for many years. Doubtless it must pay them or they would discontinue the system.

A good profit sharing system might also be adopted by other mills, and haye it so arranged that it would also apply to the second hands, overseers and superintendent in an equitable manner.

It should go without saying that no responsible man who is successful could offer any serious objection to this, because it would prove to his advantage financially. For the man who cannot hold up his end nor progress, the system would prove mutually useless.

This new system might be based upon production and the quality. While it is believed that this would be a good system for all responsible men, it should also apply to all the operatives. Would also advise that the system could be extended furthermore by including a wage re-adjustment or sliding scale which should be based upon reductions of waste, supplies, repairs, etc. There is no question that there is too much waste of good materials made in many of our mills. Also that there is much more repairing done than is necessary. Therefore if every hand in the mill knew that by personally preventing needless wastes, their pay envelope will contain more income in dollars and cents, labor and sense will become much more efficient. There is no doubt that in most any mill, a system can be worked up so that each operative would become a committee of one who personally does a super-part in the elimination of wastes. In other terms if the pay of an employee depends upon the basis of: Increased production and quality and a reduction in waste, supplies, repairs, power consumption and light, more effort will be made to earn more from this sort of opportunity. In the ordinary mill the above will average about the same year after year. Now let us suppose that the efficiency can be increased 10 per cent and that a drive is made to gain this saving. If 8 per cent is saved, it will be well worth while to recognize this by sharing part of this saving with the operatives who are making the super-effort to create the new higher standards of saving. That is an economical organization is worth more than one which is wasteful. This is not difficult to figure out. If we take a years average of past conditions at 100 per cent and it is found that the improved conditions are as follows: Production has increased 6 per cent and quality 2 per cent. Waste has been reduced 3 per cent, supplies 3 per cent, repairs 3 per cent, power 2 per cent and light 2 per cent. The total becomes 21 per cent for increased benefits.

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if an operative earns $16.00 per week or an average of $832.00 per year, and the premium amounts to 3 per cent of the same for the year, the operative will receive a profit sharing bonus of $24.96 or about 50 cents per week. This amounts to the same as having over $500.00 in the bank at 4 per cent interest. It seems as though some such plan could be worked out whereby each hand would become better co-workers for increased efficiency. If a plan of this kind was in force, the operatives would not burn the electric lamps when daylight is available. They would not run overtight belts which wastes power, supplies and increases repairs. The bobbins would be picked off of the floors, and none of them would be carried out to the waste house to be shipped away with the waste. A large waste dealer has stated to a mill manager recently, that he receives with the wastes from various mills an accumulation of several car loads a year of good bobbins. In the face of this our mills are obliged to replace these with new ones. One mill had a standing order to receive 10,000 new filling bobbins each month at a cost of nearly $100.00 per week. By giving careful attention to this matter this has been reduced to one-third of this amount. Now if the operatives were trained to appreciate the value of preventing such losses by a good system of profit sharing, the mills and the help would both be the gainer. There is a big difference between spending $5,000.00 per year for new filling bobbins and $1600.00 per year. If a mill is going to lose $3200.00 per year on account of lost bobbins the help might as well be trained to prevent this and divide the savings pro rata.

If it seems best, any mill can split up the system of profit sharing into departmental effort. Or it can even be brought down to sectional effort or even to individual effort. However any system which can be carried on with the least bookkeeping in connection therewith, is preferable, especially if the system is one which applies to all of the operatives alike. It is not only a question of dollars and cents, but also a question of labor and sense.

Economist.

Preventing Corrosion Of Machinery

MANY methods of combating corrosion of textile machinery have been suggested, and the following have been found of real value in use:

The most widely used method of preventing the corrosion of iron and steel is to oil or grease the parts. Frequently the results are disappointing because the proper protective materials were not used. A preparation very suitable for this purpose may be prepared by melting one part of rosin (preferably the H grade) and mixing it with ten parts of hot petrolatum. Stir this well while cooling, and then add one part of kerosene or coal oil. This product is rather soft and has a low melting point, but if a more solid grease is desired, a little candelilla wax may be substituted for a part of the petrolatum.

Another semi-solid product may be prepared by heating together at 125 deg. Cen. (257 deg. Fah.), three parts of candelilla wax, six parts of rosin and 50 parts of petrolatum. Carnauba wax may be used in place of the candelilla according to the following: Two parts of carnauba wax, five parts of rosin and 50 parts of petrolatum.

According to recent data good results may be obtained by "pickling" the iron or steel in solutions of certain chemicals. Of course, this method is only suitable for small apparatus or parts. Before attempting to pickle the metal, it should be thoroughly cleansed of all oil, grease or other foreign matter, so that the chemical solution may come into intimate contact with every part of the metal. Nitric acid of 1.4 specific gravity has been very successfully used in this manner, as well as fuming sulfuric acid. After the acid treatment, the metal should be rinsed free of acid, the excess of acid neutralized in a bath containing soda ash, and the metal then rinsed again and dried. It has also been suggested to pickle the metal in a weak acid solution while connected as the cathode of an electrical low voltage circuit.

Solutions of chromic acid and certain chromate and bichromate salts, especially zinc chromate and sodium and potassium bichromate, impart certain anti-rusting properties to iron and steel surfaces. Potassium ferrocyanide solution has also been used in this way. The action of these chemicals is usually accelerated by using hot and fairly strong solutions. The metal should be rinsed and dried after the treatment. With use and time the inhibiting action, which is entirely on the surface, appear to wear off.

Certain paints prepared, especially as anti-rust compounds, and containing either manganese dioxide, chromate or dichromate salts, have also been used upon large surfaces with very good results.—Textile Recorder of Manchester, Eng.

Texas Mills Protest Higher Freight Rates.

Dallas, Tex.—Continuance of present freight rates on cotton fabrics from Texas and Oklahoma cotton mills to distribution centers in the Middle West and South is sought by F. A. Leffingwell of this city, secretary of the Texas Industrial Traffic League, in a brief filed recently with the Interstate Commerce Commission. Mr. Leffingwell gives a statement of issues involved in the case, which was heard both in Dallas and Memphis, Tenn., during November last by an examiner of the I. C. C. He also represents the Texas Cotton Manufacturers' Association, and the Texas State Manufacturers' Association, in the petition.

RAYON REEDS

On account of the ever-increasing use of Rayon (artificial silk) by Southern cotton mills, we are making a reed particularly adapted to the Rayon yarns.

Special attention is necessary to the finish on the wire used in these reeds, which finish requires approximately three times the length of time usually given to regular reed wire.

There is, however, absolutely no extra charge for this special finish as we invoice Rayon reeds at our regular standard prices.

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THE STEEL HEDDLE LINE

"Duplex" Loom Harness (complete with Frames and Heddles fully assembled). Drop Wires (with Nickel Plated, Copper Plated or Plain Finished). Heddles—Harness Frames—Selvage Harness —Leno Doups—Jacquard Heddles—Lingoes—Improved Loom Reeds—Leno Reeds—Lease Reeds—Beamer Hecks—Combs.

Elmira Cotton Mills Offer Mortgage Bonds

A new issue of $375,000 6 per cent first mortgage sinking fund bonds of the Elmira Cotton Mills of Burlington, N. C., is being offered for public subscription by R. S. Dickson & Co. The bonds are dated Jan. 1, 1926 and are due Jan. 1, 1936.

The purpose of this financing is to pay off outstanding indebtedness which was created principally through the construction of an addition to the plant and to provide equipment for the manufacture of fine woven fabrics with cotton and silk mixtures.

For the past nine years net earnings before income taxes have averaged more than four times the annual interest requirements on this issue of bonds and nearly twice the combined sinking fund and interest requirement.

The mill building of the Elmira Cotton Mills contain 10,600 spindles and 657 looms. The company owns 85 acres of land about half in the city of Burlington and also 98 tenements sufficient to accomodate a full quota of day and night employes. The plant and equipment has been appraised at $1,100,652 and a depreciated value of $811,909.

As the management of the mills, the principal stockholders and officials, are members of the Holt family, who were the pioneers in cotton manufacturing in North Carolina having successfully operated plants in Alamance county for over 40 years. The plants will continue to be operated under the present management. E. C. Holt, president; J. H. Holt, vice-president; W. T. Cheatham treasurer and J. A. Barnfell secretary.

Among the provisions of the present issue of bonds it is noted that no dividends shall be paid on any of the capital stock outstanding if such payment would reduce the net quick asets of the company below 70 per cent of the par value of the bonds then outstanding. It is also provided that the combined salaries of the officers and office employes shall not be greater than $25,000 per annum without consent of 75 per cent of the value of the bond outstanding.

Chattanooga Textile Growth

Chattanooga, Tenn.—Chattanooga made notable progress in its growth as a textile center during the past year. In that 12-month period a total of 1,658 knitting machines were added by 22 of the larger mills in the district, according to figures just compiled here. There were doubtless many other smaller concerns, who added a few machines which are not included in the total figure.

Good progress was also made by the spinning industry. A total of 8,000 spindles were actually added. The Standard-Coose-Thatcher company announced during the year that it would add 5,000 spindles while the Dixie Mercerizing company has announced plans for a 10,000 spindle addition to its spinning plant for 1926. This gives a total of 23,000 spindles for the two-year period.

The woolen cloth manufacturers also fared well. A gain of 196 looms was made here. One large concern the Peerless Woolen Mills, disposed of a number of its old looms replacing them with new broad looms. There were several entire new industries added during the year in the textile line. These included the new plant of the Central Franklin Processing company, commission dye plant, representing an investment of about $350,000; the Davenport full-fashioned silk hosiery mill costing $750,000, and the new National Yarn Processing company with an investment estmated at $600,000.

The outlook for next year is even brighter. The Peerless Woolen Mills is now assembling material for its new addition which will cost for the building alone $125,000. The Dixie Mercerizing Company has announced that it will build a $350,000 addition to its spinning mills. The McAllister Hosiery Mills has purchased a site for a new hosiery plant, but has not announced its definite plans. Other developments are in the air.

Cotton Consumption In December

Cotton consumption during December, 1925, was 41,482 bales greater than for the same period in 1924, the figures being 575,271 and 533,789 bales, respectively, according to the regular cotton consumption report, made public by the Bureau of Census.

Cotton consumed for the five-month period ended December 31, 1925, totaled 2,593,000 bales, and for the corresponding period in 1924, consumption was 2,359,000 bales.

Cotton in consuming establishments December 31, 1925, according to the report, totaled 1,717,000 bales, and for the same period a year ago, 1,319,000 bales. In public storage and at compresses on December 31, 1925, there was a total of 5.608,000 bales, as compared with 4,616,000 bales for the same period in 1924.

Imports of foreign cotton during December, 1925, totaled 34,474 bales, as compared with 48663 bales for the same period in 1924; while exports during December, 1925, were 984,000 bales, as compared with 1,075,000 bales for the same period in 1924.

Figures for 1925 include 16,022 Egyptian, 5,680 other foreign, 836 American Egyptian, and 261 Sea Island consumed; 27,306 Egyptian, 24,176, other foreign; 2,730 American Egyptian, ann 2,235 Sea Issand in consuming establishments, and 9,503 Egyptian, 12,507 other foreign, 6,329 American Egyptian, and 497 Sea Island in public storage.

Five months consumption, 80,207 Egyptian, 33,215 other foreign, 3,795 American Egyptian, and 1,242 Sea Island.

Linters consumed during five months ending Dec. 31, amounted to 331,000 bales in 1925, and 253,451 bales in 1924.

Improved
BEAM DYEING MACHINES
As developed by
GASTON COUNTY DYEING MACHINE CO.
STANLEY, N. C.
WARPER TENSION CONTROLS
Essential to good Beam Dyeing
BEAM DRYING MACHINES
Essential to good Slashing

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Styling and Distribution Two Big Problems

The many changes in the industry which have been coming along in rapid succession in the past few years make interesting subject for conversation in the market.

Those with old fashioned ideas, who had stuck steadfastly to them, found it necessary, all of a sudden, to change them completely, or stand in danger of being wiped out. The changes that have taken place in the policies of the various houses in the market, are numerous and too vast in significance, to attempt to describe in brief. Some of the large houses were slow to make the changes, but they found no alternative.

One merchant, discussing what has happened, points to the converter. "Strictly speaking, I would say," he said, "there really is no place for the converter. I say this in spite of the fact that I have been in the converting business myself, and have had a fair degree of success. The only reason for the converter, is the fact that the big houses have been unwilling to do the things that were required by the impetus of the times. The converter sold his opportunity, to show that the big houses were slow to make the necessary changes, so he jumped in, brought out the goods that were wanted, and was able to make his business pay, and sometimes he was able to make it pay fairly well."

The Two Most Important Phases.

In the cotton textile industry today, two of the most important phases are: (1) To make the right kind of merchandise when it is wanted, and (2) to get the best kind of distribution. These two are the most important phases of all industries, or at the same time the two weakest links in the chain which controls the success or failure of all business. These are the two elements which are being given greatest attention in the industry today.

Important factors are convinced that there are too many of several things. They believe that there are too many mills; they believe there are too many converters:

All this points to the likely continuation of the keenest sort of competition. This means that their distribution methods must be perfected to the highest degree, and that merchants must minimize the risk possibilities in the new topics which they bring out from time to time.

What is the Best Method of Distribution?

There does not seem to be today any definite or concrete conviction as to what is the best method of distribution. There have been arguments in considerable numbers during the past year, regarding the importance with which the jobber plays in the market today. The hand-to-mouth buying, it is stated, makes the jobber indispensable to the retailer. However, in spite of all that has been said in this regard, one can hear in the course of visits throughout the market, considerable question and doubt as to what is the best course to pursue. The broadest and the best type of distribution must be had, particularly when large volume is involved.

One commission merchant states that he favors the wholesalers, but that he believed also that where the wholesaler does not give him the proper distribution, that it is up to himself to have his men go out and help the wholesalers. Proper distribution must be had some way.

One merchant suggests that it is possible to sell the retail trade, and yet have the jobbers seek his merchandise, if he produces sufficiently attractive goods. He realizes that it is contrary to ordinary logic to think of the jobber seeking goods which are sold direct to the retail trade, which reveals that as no attention is being paid to style, the clever buyers will seek out the best merchandise regardless of whether these are designed for the retail trade direct or not.

Need to Build Up Confidence.

Another important phase that should be developed, is that of confidence between the buyer and the seller. If the truth were known today, it might be said that there is very little if any confidence between the buyer and the seller in the cotton goods industry today. This is true of the converter with the mill and is true of a jobber and the commission house, and probably equally true of the various other angles of the market. There has been entirely too much surface conduct—too little regard for consequences.

—Daily News Record.

Contract Let for Bemberg Rayon Plant.

Elizabethton, Tenn.—General contract has been awarded to the Hughes-Foulkrod Co., of Pittsburg, Pa., for the erection of the big rayon plant here for the American Bemberg Corporation. Materials and equipment are already being assembled and it is expected that 500 workmen will soon be engaged on the work. The Roanoke Bridge & Iron Works, contractors for the steel construction, are building a traveling crane to facilitate their work. Lockwood, Greene & Co. of Boston and Atlanta are handling engineering details through their New York office. R. J. H. Worcester and Harold Hunter are in direct charge of operations for the engineers.

D. H. Warlick.

D. H. Warlick, prominent cotton manufacturer and business man of Hickory, N. C., died suddenly at his home last Thursday night. He was ill only a few moments. Mr. Warlick, for a long period of years, had been secretary and treasurer of the Dudley Shoal Manufacturing Company., the Falls Manufacturing Company and the Southern Mills Company, all of Granite Falls.

Let Us Fix Your Requirements

You are assured of complete satisfaction in all your dealings with us.

The quality of our products and the service we render are alone responsible for our growth. Emmons Quality Loom Harness and Reeds have retained every old customer and gained new customers year after year.

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Southern Representative: GEO. F. BAHAN

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OIL

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Castor Oil

MONOSULFOL OIL takes the place of all ordinary sulphonated Castor Oils, Turkey Red Oils, etc., on cotton, wool and silk, and is used as a softener, dyeing assistant and wetting out oil.

Having a higher degree of sulphonation than any other sulphonated Castor Oil, it will go much farther, penetrate better, *and can therefore be used in reduced amounts.* It gives a brilliant clear solution in water, and therefore has superior wetting properties.

On account of being low in soap content, it is not decomposed by hard water, and trouble with insoluble Lime or Magnesia soaps is therefore avoided. For the same reason it is not thrown out of solution by acids, or chemical impurities of dyes or other things, which would render an ordinary sulphonated oil completely unfit for use. This feature also prevents foaming.

The Acid Test

In order to be sure that a sulphonated Castor Oil is properly made, so as not to be thrown out of solution by acids or other chemicals, a simple comparative test is very enlightening, as follows:

Take about 10 grams of Monosulfol Oil and 10 grams of any competitive oil. Dissolve each of these in 30 grams of water and stir thoroughly. Now add about 10 grams of 28 per cent Acetic Acid and stir in. The Monosulfol solution will remain without change, while the other oil will curdle and separate, floating out free oil to the surface.

This test not only proves the superiority of this oil for use in acid solutions, but is a proof of care and skill in sulphonation. Any oil which will not meet this test is dangerous to use, as it is liable to be affected by many chemical substances which would decompose it and weaken or ruin it for its intended purpose.

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Oil Products Co.

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Cotton Mill Processes and Calculations

By D. A. Tompkins.

Copy Revised for Third Edition.

(Continued From Last Week)

SLASHER GEARING.—FIG. 48.—LETTERING.

A. Tight Pulley.
B. Slow Pulley.
C. Loose Pulley.
D. Slow Pinion.
E. Slow Gear.
F. Reducing Pinion.
G. Shaft Gear.
H. Pawl.
K. Ratchet Gear.
L. Driving Cone.
M. Fan.
N. Driven Cone.
P. Cone Pinion.
Q. Front Roll Gear.
R. Beam Gear.
S. Friction Plates.
T. Hand Screw Wheel.
U. Loom Beam.
V. Bearing for Loom Beam.

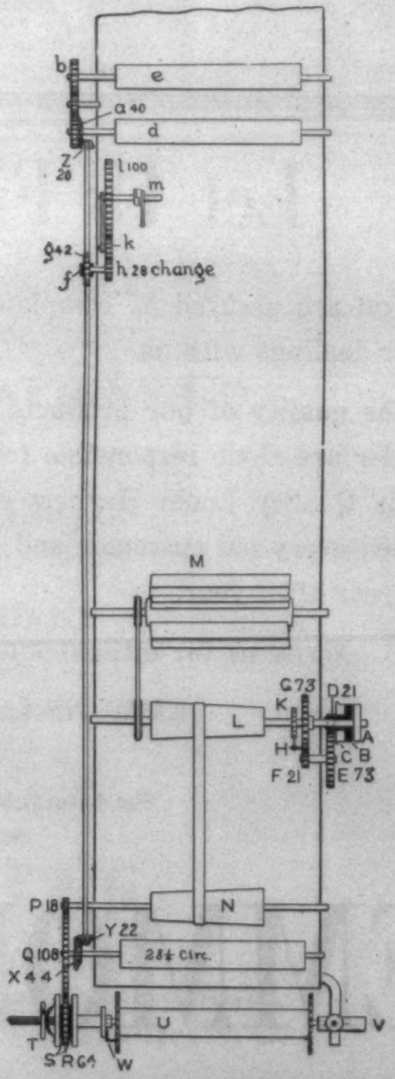

Fig. 48. Slasher Gearing.

W. Dog to Drive Beam.
X. Front Roll Bevel.
Y. Side Shaft Bevel, Front.
Z. Side Shaft Bevel, Rear.
a, b, Squeeze Roll Gear.
d, e, Squeeze Rolls.
f. Worm in Side Shaft.
g. Gear to Drive Cut Marker.
h. Change Gear for Cut Marker.
k. Intermediate.
l. Gear on Cut Marker.
m. Cut Marker.

SLASHER GEARING—OPERATION.

219. Main shaft belt on pulley A drives cone shaft L. This drives by cone belt another cone N.

Cone N drives by gearing the front roll Q which draws the sheet of yarn and causes cylinders to revolve.

Side shaft Y Z is driven by bevel gears X Y. Bevel gears on the other end drive copper squeeze rolls d, e. Heavy iron rolls covered with flannel rest on the copper rolls. Yarn passes between these at same speed as at front roll. Q. A pulley on driving cone L drives fan M.

The pulley B is a slow pulley, the action of which is similar to that described in connection with warper 207. In Fig. 48, however, is shown a ratchet and pawl, through which slow motion drives main shaft. When slow motion is in action the pawl H drives ratchet K, which is fast on main shaft. When main drive pulley is in action, the ratchet K runs and leaves the pawl. By this arrangement, slow plley does not turn when belt is on main drive pulley. If the connection were through direct gearing, the slow pulley would be driven even when drive pulley is running. But it will work either way.

CUT MARKER.

220. On the side shaft is a worm which drives the cut marker. This is a device for marking the warp at regular intervals, to indicate where to cut the piece of cloth, when woven from this warp.

Worm f drives through the train f, g, h, l, a small short shaft carrying a wooden disc which dips into a pot of ink or dye, and marks the warp at every revolution. The disc is not made fast to the little shaft, but is connected through a clutch, and counterweighted, so that as soon as it is carried to its topmost position in contact with the yarn, it falls to its lowest position, to be carried up by the clutch again at its next revolution. The disc is connected in this way in order to make but a short mark on the yarn. If it were rigidly connected, the shaft turns so slowly that the mark would be many yards long.

$$\frac{50 \times 36}{28\frac{1}{4}} = 63.7$$

times to deliver 50 yards, and the cut marker must turn once. Consider the cut marker the driver and write the formula

$$\frac{100 \times 42 \times 22}{h \times 1 \times 44} = 63.7$$

This is the same kind of formula discussed in the calculation for roving machinery, in which the known quantity may

(Continued on Page 27)

OUR FIELD
HOYT BELTING
EDW. R. LADEW CO. INC.
SINCE 1835
TRADE MARK

A belt *must be good* to stand this drive

One of the many hard drives on which Ladew Belts are giving long-term service uses a 30-inch Ladew Belt running over a tightener. It has to fight with short turns, high speed, contact on both sides and reverse bends.

Its ability to give uninterrupted transmission on a drive like this is eloquent testimony to the fine leather, thorough currying and fine cement that go into all Ladew Belts. They'll cut the belting cost in your plant and give you a new idea of belting dependability and service.

All the details have been gathered in our interesting "Proof Book," which contains much information that is of value to every belt user. Send in the coupon for your copy.

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SOUTHERN
TEXTILE BULLETIN

Member of Audit Bureau of Circulations
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CLARK PUBLISHING COMPANY
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David Clark — *Managing Editor*
D. H. Hill, Jr. — *Associate Editor*
Junius M. Smith — *Business Manager*

SUBSCRIPTION

One year, payable in advance — $2.00
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Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

ADVERTISING

Advertising rates furnished upon application.

Address all communications and make all drafts, checks and money orders payable to Clark Publishing Company, Charlotte, N. C.

Coming Through

CLOSE upon the heels of the editorial in Home and Foreign Fields repudiating the play written by Mrs. Moffett Rhodes, splendid editorials have appeared in two of the leading Baptist papers, the Biblical Recorder of Raleigh, N. C., and the Baptist Courier of Columbia, S. C.

We wish we could have reprinted these editorials on this page, but because of lack of space we have had to put them on Page 8, but hope that they will be read by every subscriber.

It is, indeed, a great change to have religious papers of such standing come out so strongly and give the cotton manufacturing industry credit for making an honest effort to care for their employees.

Baiting the cotton manufacturing industry of the South and accusing it of all manner of iniquities has long been a favorite sport of editors and special writers, and less than two years ago an organized simultaneous attack upon the industry was made in thirty-one of the leading magazines and newspapers of the country.

There has indeed been a remarkable change in public sentiment and we attribute it to the campaign of education that was conducted during the fight against the Federal Child Labor Amendment.

During that campaign approximately 300,000 pieces of literature were sent from our office to newspapers, magazines and individuals located in every section of the United States.

We wanted the people to learn the truth about the child labor laws and living and working conditions prevailing in our mills, and our literature was carefully and accurately prepared.

The most effective piece was a slip containing extracts from the Child Labor Laws of each of the Southern States.

Upon receiving one of those slips a prominent California paper published it on the editorial page with the statement that if these are the Child Labor Laws of the South there is no need of a Federal Child Labor Law.

It is the absolute truth that prior to the educational campaign against the Federal Child Labor Amendment, there were thousands of the very best people in the country who believed that children of six and seven years of age worked for twelve hours per day, under deplorable conditions, in Southern cotton mills and that it was nothing unusual for a child to have its arm cut off or drop down in the mill and die from fatigue and overwork.

Such beliefs had been created by Owen Lovejoy and his parasite cohorts of the National Child Labor Committee and Miss Grace Abbott of the Childrens Bureau of the U. S. Department of Labor, who had visions of receiving and dispensing an annual appropriation of at least one million dollars.

We spent almost our entire time for eight months on our publicity campaign and visited prominent men and women in every section of this country, but feel well repaid for our effort when we realize that the religious press has learned the truth and freely writes such editorials as those of the Biblical Recorder and the Baptist Courier.

The cotton manufacturing industry is coming through. It is coming out of the mire and filth where it was for many years consigned by special writers and editors and is is now taking its rightful place with the decent and reasonably well conducted industries of this country.

Without claiming to be ideal or perfect our industry can now claim for itself a large measure of respect.

More About Fancy Weavers

OUR editorial about "Fancy Weavers" seems to have attracted an unusual amount of attention and we are publishing on Page 8 of this issue two very interesting and instructive letters received from men of long practical experience. Our object in writing the editorial was two-fold.

In the first place we wanted to save the mills from the loss incident to employing superintendents and overseers who were not qualified to manage as well as design.

In the second place, to impress upon the men striving to become competent to operate fancy mills, that they should study management and that more was required than the ability to make a beautiful piece of goods on one or a few looms.

The South is going to grow rapidly in the weaving of silk and rayon and cotton mixtures and we know that the young men in our cotton mills have the ability to become the best fancy weavers in the world.

We hope that our warning is going to be the means of steering many of them into the right channels and into paths that will lead to success.

Negroes Moving South

THREE and four years ago there was a general movement of negroes to the North and the farmers of the Southern States, especially those of Georgia suffered severely for several seasons.

It was inevitable that the negroes would return South, where they belong, and where they are understood and the backward movement greatly aided the eastern States of the cotton belt to raise the large crop of 1925.

Recently, another and more serious migration has set in, the movement of negroes to Florida and again Georgia suffers most severely, but movement is also being felt in South Carolina and Alabama and to some extent in North Carolina, Mississippi and Louisiana and it is growing very rapidly at the very season that the farmers are deciding upon the 1926 acreage.

Florida is trying to do a five year normal building program in one year and the demand for common labor has forced wages up, and the labor agents are scouring the southeastern States.

Negroes are moving from the farms to Florida at a very rapid rate and that undoubtedly going to play a big part in the 1926 acreage and the ultimate yield of cotton.

If the negroes come back in any large volume, which is very doubtful, they will come too late to assist in planting the 1926 crop.

Very little has been heard of this Florida movement until the past three weeks, but it is now growing so rapidly as to cause alarm.

Trade Conditions Are Good

THERE are a number of factors in the textile situation which indicate that fundamental conditions are on a much sounder basis than has been the case for some time.

Cotton prices seem fairly well stabilized and should become steadier after the final ginning report of the season is issued. The recent strength of the market has been so well supported that the very large crop should not prove as great a handicap to good business as many mill men have feared.

On account of gradually improving conditions in Europe, it is reasonable to expect a continuation of our large exports of cotton. During the first 11 months of 1925, our cotton exports were 1,800,000 bales greater than during the same period in 1924.

Our export trade in cotton goods is improving. Exports of piece goods in the first eleven months of 1925 were 62,000,000 yards above those in the same months during 1924. On the other hand, imports of cotton goods during the same period were 60,000,000 square yards less than for the previous year, giving us a favorable trade balance in piece goods business of 62,000,000 yards.

Stocks of yarns and goods at the mills and in the markets are very low. Mills succeeded in cleaning house last year. The voluntary and enforced curtailment last summer and fall were important factors in clearing away surplus stocks.

Buyers of cotton yarns and goods have for a long time operated strictly on a hand to mouth basis. The fact that most mills are well sold ahead, coupled with the small stocks available to buyers, should mean that they will have to anticipate their needs more freely.

The mills have learned many valuable merchandizing lessons during the past several years. They have become more skilled in management and in the elimination of waste. They have a new appreciation of the value of style, and they are better able to get quality production than ever before.

All these things make for a very encouraging outlook. The greatest danger in the situation, we believe, is that of overprduction.

The mills should get a good steady business in 1926 provided they keep production within the limits of demand.

Approves Our Highway Views

WE have received the following letter from G. E. Shand, Jr., of the Shand Engineering Company, Columbia, S. C., relative to our recent editorial on the "Pay-as-You-Go" plan of highway building:

> Please allow us to congratulate you on your editorial on the "Pay-as-You-Go" plan of road construction, which appeared in your issue of Dec. 17th. We consider this a splendid statement of facts, and we are taking the liberty of calling it to the attention of the Governor of South Carolina.

FRANK B. KENNEY
President

CLARENCE R. HOWE,
Vice President

MARSHALL F. CUMMINGS,
Treasurer

T. C. Entwistle Company

Lowell, Massachusetts, U. S. A.

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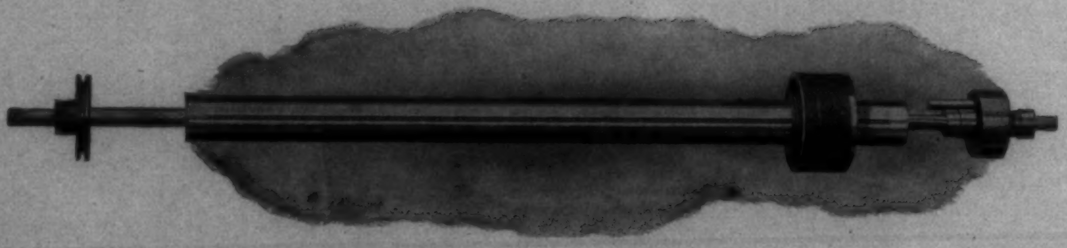
Entwistle Grinders



TRAVERSE WHEEL GRINDER

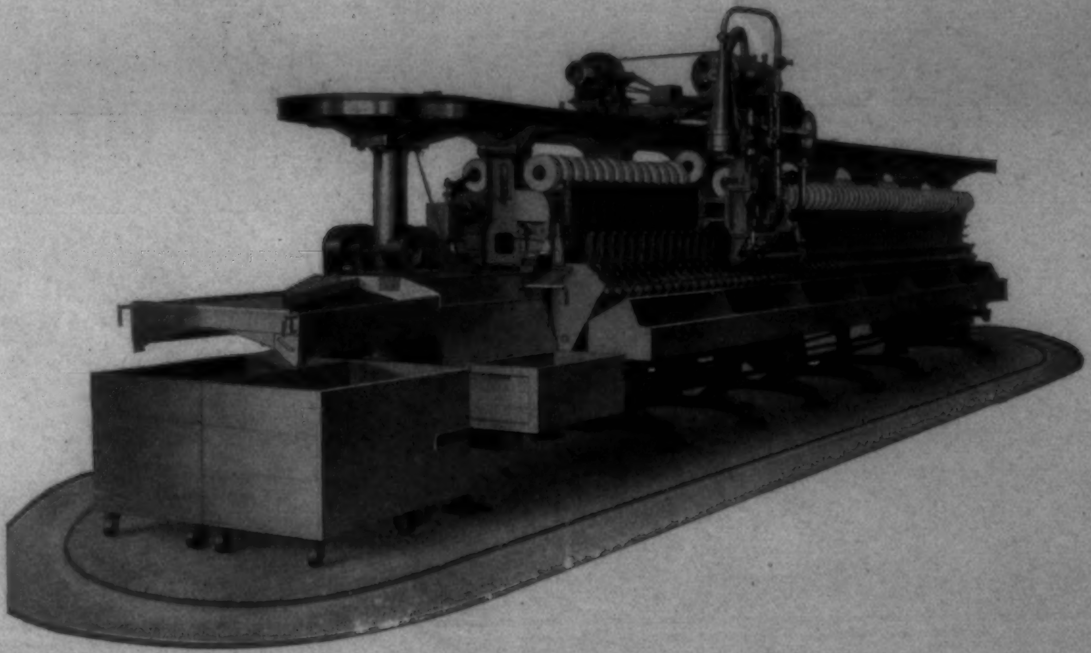
ROLL GRINDER

The Illustrations show our traverse wheel and roll grinders. The high quality of our grinders is due to our full knowledge of the conditions under which they are used, a complete equipment of up-to-date machine tools and our many years' experience in manufacturing same. We make a specialty of building grinders for cotton cards. We also manufacture grinders for woolen and worsted cards, as well as grinders for special purposes.

Grinder Repairs

Repairing Card Grinders at ENTWISTLE'S is to make them equal to NEW—at a big saving in cost.

Automatic Spoolers High Speed Warpers



Reduction in help required
Reduction in spooling and warping costs
Reduction in mill village expense
Reduction in spooler kinks
Reduction in damage to yarn in handling
Reduction in slasher waste

Reduction in floor space
Reduction in yarn in process
Reduction in yarn tensions
Reduction in loom stoppage
Reduction in weaving costs
"Every knot a weaver's knot"

BARBER-COLMAN COMPANY
GENERAL OFFICES AND PLANT
ROCKFORD, ILL., U. S. A.
FRAMINGHAM, MASS. GREENVILLE, S. C.

This spool meets the change in mill conditions

LESTERSHIRE FIBRE SPOOLS EVERLASTING

Lestershire *Vulcanized* Fibre Spools

Eliminate your spool replacement expense.

Eliminate loss of yarn due to spools (in many mills this loss runs into thousands of dollars).

Eliminate all possibility of injury to employees from rough or slivered spools.

Increase, about 10% the yardage on your spools.

Eliminate spooler knots due to spools.

Eliminate broken ends on your warpers due to spools and thus increase warper production 20% to 30%.

Materially improve the quality of your warps.

And thus better the quality and increase the production in your weave room.

TO secure an even break with competition your mill must be properly equipped. That applies forcibly to *spools.* This spool of hard, wear resisting fibre—the Lestershire *Vulcanized* Fibre Spool—meets the competitive conditions under which mills now operate.

Mill executives who have noted with concern the tremendous wastes where ordinary spools are used have found that Lestershire *Vulcanized* Fibre Spools eliminate these losses. Lestershire Spools cut down on the expense side and build up in the profit column.

The principal point to remember about Lestershire *Vulcanized* Fibre Spools is that they last as long as your machines. Their heads cannot break or sliver. By eliminating replacement expense alone they perform a valued service for the textile industry.

Warper Spools for Immediate Delivery

In order to give those of our customers who use standard sized Warper Spools the benefit of immediate deliveries, we endeavor to carry on hand for quick shipment a stock of 4x5, 4x5½, 4x6 and 4x6½ spools.

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Southern Office:
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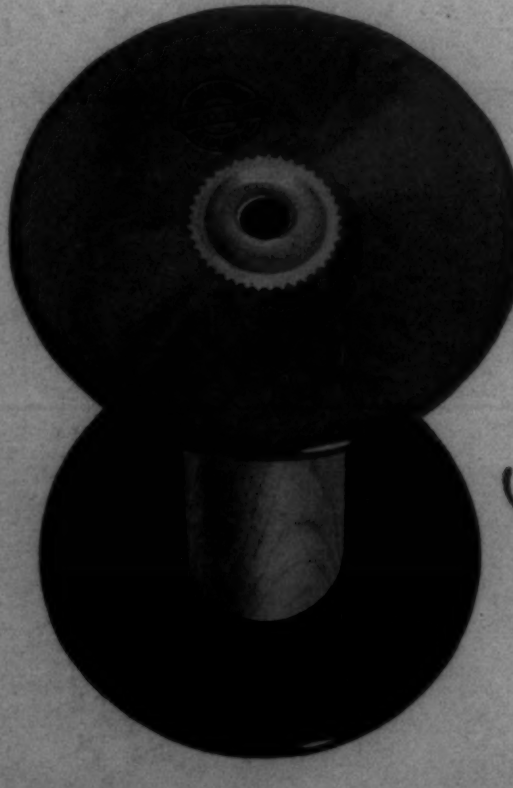

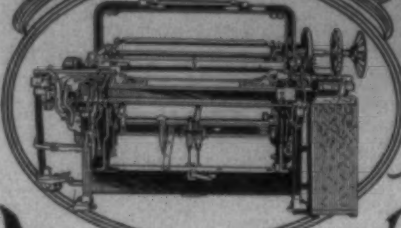

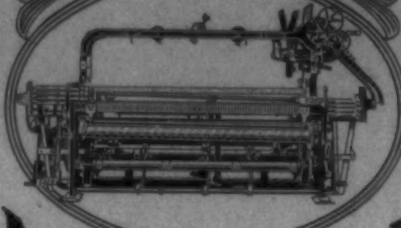

HOPEDALE
MANUFACTURING COMPANY
Milford, Mass. & Greenville, S.C.

NORDRAY
LOOMS
for Cotton,
Silk, Rayon,
Worsted,
Wool,
Linen,
Jute,
Automatic,
Plain,
High Speed,
Box Type
Gingham

We are shipping our first carload of silk looms; we are building two orders of worsted looms; we are sending cotton looms to three southern mills on three large orders; we have taken over the tool equipment of a large loom repair plant. More news next week.

NORDRAY
LOOM
ATTACHMENTS
Filling Changers
Feelers
Warp-Stops
Drop-Wires
Temples
Dobbies
Positive Head Motions
Drop Boxes
Multipliers
Leno
Marquisette
Centre-Forks

Leatheroid

Leatheroid
LIGHT WEIGHT STOCK BOX OR TRAY
Body—Leatheroid.
Top Rim—Light Steel Binding. No Shoes.
Tapered or Straight Sides.
WASTE BASKET
Body—Leatheroid. Top—Rolled over.
Bottom—Wood.
Stock Sizes
10 x 14
12 x 16
14 x 18
16 x 20
16

SEAMLESS ROVING CAN
No. 1
Patented roll top—(See page 6 for details.)
Six-inch fibre kicking band.
Steel bottom and steel chime—securely fastened with solid rivets.
Stock Sizes
10 x 36"
12 x 36"
4

No. 2
Body—Leatheroid inside, steel outside, securely riveted.
Angles—Steel, solid riveted.
Top Rim—Hard wood covered with steel.
Handles—Steel "Cut-in."
Rivets—Solid with smooth heads.
Shoes—Hard Wood—two shoes on boxes 14" wide or less; three shoes on boxes over 14" wide.
Shoe protecting iron. (See page 6 for detail.)
Made with a 2" taper to permit nesting if desired.
No. 3
Body—Leatheroid.
Top Rim—Hard wood, covered with steel.
Handles—Steel "cut-in."
Rivets—Solid with smooth heads.
Shoes—Hard Wood—two shoes on boxes 14" wide or less; three shoes on boxes over 14" wide.
Shoe protecting iron. (See page 6 for detail.)
Made with a 2" taper to permit nesting if desired.
Desirable Sizes on both Nos. 2 and 3.
18 x 12 x 12
20 x 15 x 16
22 x 14 x 14
22 x 16 x 18
24 x 17 x 16
34 x 22 x 24
15

AREHOUSE CAR
No. 2
Body—Leatheroid inside, steel outside, fastened together with rivets 2 1/2" apart.
Top Rim—Hard wood covered with steel.
Bottom Angle—(See page 7 for detail.)
Corners—Heavy Leatheroid angles covered with steel, fastened with solid rivets and burrs.
Bottom—Wood, with 3 hard wood cross cleats.
Casters—Rogers' self-oiling with 4 1/2" iron wheels.
Rubber tired, Devine or Fibre wheels if desired.
Stock Sizes
36 x 18 x 26
40 x 22 x 25
44 x 25 x 20
48 x 28 x 30
2

Leatheroid
STORE OR MILL BARREL
Body—Heavy Leatheroid.
Top Rim—Heavy steel ring, solid riveted.
Kicking Band—Four-inch Leatheroid.
Bottom—Wood, secured by flanged iron angle, riveted through two thicknesses of Leatheroid and heavy steel chime.
Handles—"Cut-in," malleable iron.
Stock size 20 x 30.
Desirable Sizes
16 x 26
18 x 28
24 x 40
20 x 30
24 x 36
12

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FIBRE CO.

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135 Brevard Court, Charlotte, N. C.
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WRITE FOR CATALOG AND PRICES

Personal News

J. H. Wood has resigned as overseer carding at the Lavonia Manufacturing Company, Lavonia, Ga.

J. A. Wilson has been appointed assistant treasurer of the Richmond Hosiery Mills, Rossville, Ga.

V. E. Wrinkle has been promoted to assistant secretary of the Richmond Hosiery Mills, Rossville, Ga.

A. A. Kirkpatrick is now filling the position of superintendent of the Danville Knitting Mills, Bon Air, Ala.

Arthur M. Dixon has been elected treasurer of the Trenton Mills, Gastonia, N. C.

E. M. Walters has resigned as superintendent of Chadwick-Hoskins Mills No. 1 and No. 2 Charlotte, N. C.

I. L. Blalock has accepted the position of overseer of carding at the Erlanger Mills, Lexington, N. C.

George Johnson has become superintendent of the Cochran Cotton Mills, Cochran, Ga.

J. L. Wharton has resigned as overseer spinning at the Georgia-Kincaid Mills, No. 1, Griffin, Ga..

E. L. Nunnery has accepted the position of superintendent of the Cochran Cotton Mills, Hawkinsville, Ga.

M. W. Driver has become superintendent of the Wayne Cotton Mills, formerly the Cardinal Mills, West Point, Ga.

J. B. Waters, of New York, has been elected vice-president of the recently organized Soddy Hosiery Mills, Soddy, Tenn.

W. H. Crow has been appointed secretary and treasurer of the Soddy Hosiery Mills, Soddy, Tenn., now under construction.

George W. McKenzie, superintendent of the Fort Mill Manufacturing Company, No. 2, Fort Mills, S. C., has been elected mayor of Fort Mill.

O. L. Yarborough has resigned his position with the Hickory Spinning Company, Hickory, N. C., to become night overseer spinning at the High Shoals (N. C.) plant of the Manville Jenckes Company.

J. K. Dixon, for the past 20 years president and treasurer of the Trenton Mills, Gastonia, N. C., has relinquished his duties as treasurer, but will continue as president.

W. B. Shannon has resigned as overseer of weaving at the Greer plant of the Victor-Monaghan Mills, to accept the position of superintendent of Chadwick-Hoskins Mills No. 1 and No. 2, at Charlotte, N. C.

Garnett McMillan has resigned as assistant treasurer and sales manager of the Richmond Hosiery Mills, Rossville, Ga., to become president general manager of the new Soddy Hosiery Mills, Soddy, Tenn.

C. S. Wilkinson has resigned as agent of the Dwight Manufacturing Company, Alabama City, Ala.

H. A. Hendricks has accepted the position of overseer of carding at the Lavonia Manufacturing Company, Lavonia, Ga.

Daniel S. Smith has been promoted from second hand to overseer spinning at the Georgia-Kincaid Mills No. 1, Griffin, Ga.

G. V. Pruitt, formerly of Mooresville, N. C., has become second hand in weaving at the Brookford Mills, Brookford, N. C.

Edwin Netherland has resigned as overseer spinning at the Perkins Hosiery Mills, Columbus, Ga., and accepted a similar position with the the Meritas Mills, of the same place.

Allan Little, for many years resident manager of the Georgia-Kincaid Mills Nos. 1 and 2 has been appointed agent of the Dwight Manufacturing Company, Alabama City, Ala.

C. M. Stewart has resigned as night overseer of carding No. 1 and 2 at the Icemorlee Mill,, Monroe, N. C., to become overseer carding at the No. 1 plant of the Carolina Textile Corporation, Dillon, S. C.

A. Z. Cates has been elected assistant treasurer of the Arkwright Mills, Spartanburg, S. C. He is the son of the late R. Z. Cates, founder of the mill.

Robert Z. Cates, of Spartanburg, S. C., has been elected president of Arkwright Mills, of that place. He succeeds his father the late R. Z. Cates, who built the mill thirty years ago.

J. W. Fox has resigned as second hand in No. 1 weaving at the Brookford Mills, Brookford, N. C., and accepted a similar position at the Chadwick-Hoskins Mill No. 1, Charlotte, N. C.

Tanner Memorial Building.

Rutherfordton, N. C.—The formal opening of the Tanner Memorial building will be held Friday and Saturday night, January 22 and 23. This building has been erected by K. S. and Bobo Tanner and Mrs. Sarah Tanner Crawford as a community building in honor of their parents, Mr. and Mrs. S. B. Tanner, and brother, J. Spencer Tanner, deceased.

Friday night a community pageant will be given. K. S. Tanner will present the building. Mayor S. E. Elmore will accept it. Rr. Leroy E. Bowman, will deliver the principal address.

Saturday night, January 23, a banquet will be given. Short talks will be made by J. M. Edwards, Forest City; Miss Florence Howard Spindale; R. E. Price, Rutherfordton; B. L. Smith, Spindale; Dr. A. M. Traywick, Wofford college, Spartanburg;

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MILL NEWS ITEMS OF INTEREST

Swepsonville, N. C.—The Virgina Cotton Mills have purchased through G. G. Slaughter, Southern representative, rayon winding equipment made by the Sipp Machine Company, Paterson, N. J.

Glen Alpine, N. C.—The Glen Alpine Knitting Mills have been incorporated by N. O. Pitts, W. S. Buller and C. V. Lael, all of this place. The company has an authorized capital of $50,000.

Charlotte, N. C.—Work is progressing rapidly on the plant of the Scandanavian Belting Company, in this city. About fifty looms for the manufacture of heavy cotton belting will be installed.

Charlotte, N. C.—The Highland Park Manufacturing Company, No. 3, which formerly manufactured ginghams, will be changed over to dobby work. Production will be started as soon as the necessory changes can be made.

Uniontown, Ala.—Work on the addition to the Canebrake plant of the California Cotton Mills has about been completed. It will be sufficiently large to double the present capacity of the mill. Most of the machinery will be shipped from California, although some new equipment is to be purchased.

Charlotte, N. C.—The Veritas Silk Mlls, which were moved here from West New York, N. J., are practically complete and will begin operation within a few days. The equipment includes new winding machinery purchased through G. G. Slaughter, Southern representative fir the Sipp Machine Company, Paterson, N. J.

Shelby, N. C.—The Lily Mill, manufacturers of mercerized yarns, has begun the manufacture of sewing thread. The company is producing a standard thread to retail at ten cents a spool of four hundred yards, as against the most widely bought thread in the country which retails at ten cents for a two-hundred yard spool. The thread is spun at the Lily Mill, and finished at the Cleveland Mill, and Power Co., at Lawndale, near here.

Smithfield, N. C.—Ivanhoe Cotton Mills, which failed May last year for $800,000, was bought by the Austin-Broadhurst interests for $250,000 at the receiver's sale.

The one bid by the old owners was taken, but it is subject to confirmation by the Federal courts. The old owners take over all claims by the former stockholders, pay these and become possesors of the mills. There is a Government tax case of three and eight thousand but these are largely penalties and not to be collected because the mill did not earn the tax.

Shelby, N. C.—The Cleveland Cloth Mills has gotten into full time production. They are producing fine goods, such as rayon filling crepe de chine, rayon filling plush sateen, brassiere cloths, linings, fancy bed spreads decorated with rayon, and rayon warp plush sateens.

Newnan, Ga.—A new cotton mill, to cost about $1,000,000 will be built in Newnan, it was decided at a called meeting, held here. Over $300,000, was suscribed by a dozen citizens at the meeting, and no trouble is expected in raising the balance within the next few days.

The Newnan Bank and Trust Co. has charge of the sale of the stock. It is understood that the mill will be owned by local capital, and that of Newnan, will have charge of the Alton W. Arnall, cotton mill owner plant. Present indications are that actual construction of the mill will start about February 1.

The McIntosh Mills, of Newnan, will become one of the largest mills in the State of Georgia with the completion of an addition to the plant adding 10,000 spindles.

Chattanooga, Tenn.—The National Yarn and Processing Co. will have its dyeing and bleaching plant completed in about 10 days, T. H. McKinney, president, announced Friday. The dyeing and bleaching plant was a part of the original development plan of the new company, but it was not generally made known. The plant will represent an investment of over $50,000 and will have a weekly capacity of 50,000 pounds. The mercerizing plant, in operation since last September, has a capacity of 100,000 pounds weekly.

Charlotte, N. C.—A committee to select a Southern site was appointed at the annual meeting of the stockholders of the Utica Steam and Mohawk Valley Cotton Mill, Utica, New York. The reason to which was attributed the decision to locate in the South is the problem of labor. It is understood the company has a site for its first Southern branch somewhere in Alabama. The company operates two mills in Utica and employs over 2,000 workers.

Greenville, S. C.—The plant of the Piedmont Plush Mill, now under construction here, will be completed in about 30 days, according to information here. The roofing and flooring are now being put in place and will be followed shortly by the installation of the machinery. It is considered likely that the plant will be ready for operation by the latter part of February and will employ about 30 persons. Fred W. Symmes, head of the Nuckasee Manufacturing Company, makers of athletic underwear, is president of the company.

Anderson, S. C.—An 8 per cent dividend on its 50,000 of preferred stock, will be paid by the Anderson Hosiery Mill, according to a statement given out by the officials of this mill following their regular annual meeting of stockholders and directors.

In the election of officers, C. G. Sayre, of Greensboro, N. C., was re-elected president and treasurer; E. U. Shealy, Anderson, vice-president and secretary and H. C. Rhodes, superintendent. These three gentlemen were also elected members of the board of directors.

This mill has had a most prosperous year and the capacity has been doubled during that time the output at this time being 4,000 pairs of hose daily or approximately 1,250,000 yearly. The product of this mill include the well known "Palmetto" and "Fit U" brands of hosiery.

Memphis, Tenn.—One of the oldest and largest cotton textile mills in New England may be located in Memphis if the proposition to be put before the Memphis Chamber of Commerce toward the latter part of January is found acceptable, according to Chamber of Commerce officials. The industrial division of the chamber is working on a tentative plan now, and states that the prospects of the mill being located in Memphis appear very favorable. The name of the textile concern has not been divulged for business reasons, the chamber officials say.

The concern would spend nearly

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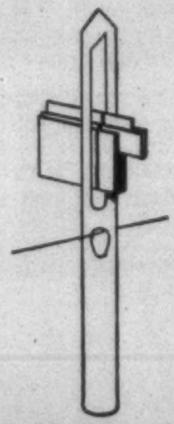
Cash refunds to policyholders, amounting to nearly $13,000,000 since organization. have realized savings to them of at least 20% of the standard stock company insurance cost.



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is backed by twenty years of experience and steady growth. It is adopted by representative mills weaving cotton, silk, worsted and woolens.
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General Designs, Grading, Planting and Detail Plans
Supervision of Landscape and Engineering Construction.
Largest Landscape Organization in the South

$1,000,000 in the equipment of its new plant and buildings, according to Henry Haley, secretary of the Memphis Chamber of Commerce.

A meeting of business and professional men of Memphis will be held within the next two weeks to go over the situation with the representatives of the textile concern, at which time an attempt will be made to reach an agreement.

Monticello, Ark.—The Monticello Cotton Mills Co., and Arkansas corporation, has merged with the Monticello Cotton Mills, of this city, as recently reported, and the new merged corporation operates under the name of Monticello Cotton Mills Company. Officers of the new company are J. G. Williamson, president; C. J. Mansfield, vice-president; L. R. Myers, secretary; Terrell Spencer, treasurer. Directors are: H. C. Couch, C. T. Harris, Joe C. Harris, C. J. Mansfield, J. G. Williamson.

The new company has announced an issue of 2,500 units, the proceeds to be used in part payment for the current assets acquired by the company by the Monticello Cotton Mills, now owning and operating the mill, and for the enlargement and improvement of the plant in accordance with the recommendations of a prominent firm of textile engineers who have made a recent study of the situation. Each unit consists of one share preferred stock $7 dividend fiseries, without par value, and one share of common stock.

It is proposed to at once increase the capacity of the present mill by 4,000 spindles, making a total of 12,000 spindles. Some of the older machinery in the mill will be replaced by new and modern equipment, which together with the complete electrification of the entire operations, will result in greater production capacity at less cost. It is also proposed to construct a new concrete building of modern design in which the new equipment will be installed.

Chattanooga, Tenn.—Several imchanges in the official personnel of the Richmond Hosiery Mills were announced Friday. Garnett McMillan, assistant treasurer and sales manager for the Richmond Company, has resigned to assume position of president and general manager of the recently organized Soddy Hosiery Mills, at Soddy, Tenn.

J. H. Wilson, treasurer of Richmond Company, continues to occupy this position and in addition becomes manager of sales. Vance King has been made assistant treasurer of the Richmond Company and V. E. Wrinkle has been promoted to assistant secretary.

It also was announced by officials of the Richmond Hosiery Mills that this year's improvement program calls for installation on additional machinery which will increase production by 2,000 dozen of hosiery per day, and will bring the daily capacity of the Rossville plant to between 6,000 and 7,000 dozen pairs. Facilities for new equipment were provided in the building program carried out last year. The amount involved in installation of new machinery was not made public. J. B. Waters of New York has been made vice-president of the Soddy Hosiery Mills and W. H. Crow of Soddy has been made secretary and treasurer. Mr. McMillan and Mr. Waters have organized a separate company for the exclusive sale of the product of the Soddy Mill. This is McMillan-Waters Company, the former being ing charge of the Chattanooga office and the latter of the New York office.

Red Springs, N. C.—Hiram Grantham acting for the six other directors of the Red Springs Cotton Mills, bid in the property for $150,000 at the receivers sale here. There were no other bids. The directors besides Mr. Grantham are Archie T. McCallum, Ben Townsend, W. J. Johnson, W. F. Garrett, W. J. Council and J. A. Singleton. The directors stated that their action was too protect themselves on $180,000 in notes which they had personally endorsed for the company.

The bid price was regarded as very low and occasioned surprise here. The last auditors statement showed that the value of the entire mill property was about $500,000 and that the indebtedness amounted to about $300,000. The company was capitalized at $392,000. The mill and the village are modern and well equipped. The plant has 7,000 spindles and 160 looms. It was originally built as a yarn mill, the looms being added in 1920. It manufactures broadcloths and fine shirtings.

The Red Springs Cotton Mill began operation during the war and was very properous for a time, paying two dividends of ten per cent each, in cash and a 50 per cent stock dividend. The company began to encounter financial troubles during the slump after the armistice. It was then that the 7 directors borrowed money on personal endorsement to keep the mill in operation.

Some time ago, R. B. Jennings was appointed receiver and has operated the mill without loss, it is said.

In addition to the purchase price, the bidders agreed to take over, and complete all existing contracts made by the receiver, to pay about $40,000 due to the Stafford Company, for the looms and to assume payment of all Federal, State, county and municipal taxes that have become due since April 30, 1925.

Some of the minority stockholders have stated that the directors in bidding in the mill at $150,000 had done so in order to "freeze out" the minority stockholders and expressed dissatisfaction with the whole liquidation proceedings. The directors state they acted merely in self defense to protect the loans they secured for the mill company.

The bid is subject to court information. It is reported here that the bid will be raised by textile interests of Wadesboro, who are now planning to bid in the plant and reorganize the company.

Five Units in Johnson City Plant.

Johnson City, Tenn.—Full plans for the Johnson City plant of the American Bemberg Corp., call for five units, according to Dr. Arthur Mothwurff, president of the American Bemberg Corp., who has been with the company officials inspecting the construction work. The first unit, to cost between $,000,000 and $3,000,000, will be completed in about six months. The fifth unit will be completed in about five years time if present plains are followed.

"It is our expectation that the building of the next unit may follow shortly after the beginning of operation of the first," Dr. Mothwruff is quoted as saying.

Riverside Chambrays.

Riverside & Dan Oiver Cotton Mills have made new prices on Defiance chambray, Golden Rule chambray, Big Four chambray, Ideal chambray, and Riverside plaids, for January-February-March shipments, all subject to immediate supply.

DRUIDOAK
LOOM LEATHERS
Highest Grade Oak Tanned
For Cotton, Wool and Silk Looms

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Lugs, etc. Jack Straps

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Cotton Mill Processes and Calculations

(Continued from Page 21)

be substituted for the unknown in the denominator. Proceeding thus, we write the formula

$$\frac{100 \times 42 \times 22}{63.7 \times 1 \times 44}$$

This works out about 33, and this is the change gear to put on to mark yarn every 50 yards.

221. Multiplying 50 to 33 gives 1650 for a constant. This constant may be divided by any length wanted to get the change gear that will make that length. If a 60 yard cut is wanted the gear would be 1650÷60=27. These lengths of warp must be calculated somewhat longer than the cut of cloth is wanted, because there is a certain amount of contraction in weaving. This amount varies with the number of the yarn in both warp and filling and with the character of cloth woven; but it is for ordinary sheetings from 5 to 7 per cent. Thus, if cloth is wanted in 50 yard cuts, the warp must be marked in slasher about 53 yards.

The squeeze rolls d, e and front roll Q are made the same size, so that the same amount of yarn will be delivered as received, and there will be no stretch and no sag. Generally, however, the front roll is covered with a few thicknesses of heavy sheetings to make a perfectly smooth soft surface for the yarn. This makes a very slight stretch, but does not effect the result.

The amount of yarn delivered is governed by speed of front roll. The loom beam must run just fast enough to take up this warp at all times. When it first starts, its circumference is small and it must turn faster than it does later after its diameter has increased. This variation is accomplished through the friction connection R, S. The hand wheel T is screwed up against the friction plate until the yarn between front roll and loom beam feels tight. The amount of this tightness is noticed and adjusted by feeling, from time to time. The tendency of the gear R is to run too fast even to wind the yarn on the smallest diameter. If the friction is screwed up too tight, the loom beam will run too fast and break the yarn. If the friction is too loose, the yarn will be slack on the beam. The adjustment must be made entirely by judgment and experience. It is best to err on the slack side.

222. A pressure roll, resting on anti-friction rolls under the loom beam, is kept pressed tight against the yarn on beam by means of a counterweight. This keeps it even and tight.

It is natural, at the first glance, to assume that the cones are for the purpose of adjusting the tension between front roll and loom beam. But it has no connection whatever with it. The position of belt on cones determines the speed of front roll; but it controls the speed of friction plate R in exactly the same way, driving it, in fact, with the same gear, hence it does not alter the relative speed of front roll and loom beam. This can only be regulated by the friction.

223. The cones are for the purpose of varying the entire speed of the machine. The speed of driving pulley is calculated to run front roll at maximum speed desired when cone belt is at fastest point, and warp beams in creel are full. The cone belt may be shifted to reduce speed whenever desired. The primary purpose of the cones is to reduce speed as the warp beams in creel become reduced in diameter. If speed of

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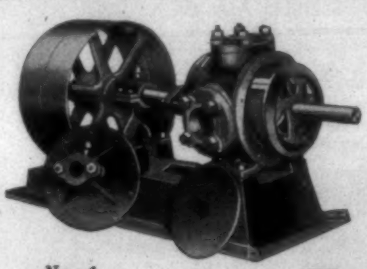

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machine is adjusted to maximum allowable when beams are full, the yarns pulls off easily, and the beams revolve slowly. As the set proceeds, and beams reduce in diameter, the leverage of yarn in turning beams becomes reduced; and at the same time the beams must revolve more rapidly.

Thus, if yarn retains its same speed, it will become strained. To reduce this strain, the cone belt is shifted to reduce speed. There is a device arranged to automatically shift belt as set proceeds, but it is not much used, except in cases where the capacity of slasher is strained to the utmost, and it is necessary to obtain all possible production. The cone belt is also used for reducing speed in case the slasher tender is temporarily called away. It is also used when the weather is wet, and there is so much humidity that yarn does not dry well on cylinder at fast speed.

The slow motion is thrown into action whenever there are ends to piece up. Unless it becomes absolutely necessary the machine should never be entirely stopped for the reason that the steam inside of cylinders will burn a brown place on the yarn. Of course it is necessary to stop it when loom beam runs full; but with quick and careful attention, the stop should be very short for doffing—not more than 2 minutes.

A bell is attached to cut marker to ring at each mark so that the slasher tender will be notified in time to doff loom beam at a cut mark. An index is also attached to count the cuts, so that, if desired, the same number of cuts may be put on each loom beam.

The front comb is adjustable in the same way, and for the same purpose as for warper. The adjustment is also used for gradually narrowing the sheet of warp when loom beam is full, so that warp may be piled up and narrowed, after the fashion of a bobbin. It is possible to pile up three or four cuts after beam is level full. There is an attachment to the comb adjuster that is arranged when desired, to automatically contract the comb for this purpose.

224. When a loom beam is filled and ready to be taken off, the bearing V, Fig. 48, is slipped off the end of beam spindle, and the beam laid on the floor. A slasher comb is put in the sheet of warp to hold the threads in line. The slasher comb is a fine reed, with about half as many dents as there are ends in the warp. It is like a loom reed cut in two lengthwise, thus leaving the teeth exposed. When reed is stuck in the sheet of warp a wooden protector is put over the teeth and tied in place at each end.

The warp threads are now cut and the loom beam is removed.

WASTE.

225. If the warper beams have been carefully made, with exactly the same amount of yarn wound on each, they will all run empty about the same time. If by any error at the warper more yarn is wound on one beam than another, this beam will have yarn on it when all the others have run empty, and this yarn will be wasted. It is usually cut off with a knife and sold for waste.

There will always be a small amount of waste on the beams at the end of a set, and a fixed amount of waste left around the cylinders between beams in creel and the loom beam, after the last loom beam is wound. Altogether it should not be allowed to exceed 4 pounds for amount on cylinders, and $\frac{1}{2}$ pound for each beam in creel. With 5 beams in creel, the maximum waste should be $6\frac{1}{2}$ pounds. This, of course, varies with counts of yarn and with number of ends being slashed, and with the skill of the operative.

226. It might seem that slasher waste would be reduced by putting more ends on a warp beam, and thus using fewer beams to make up the requisite total. Thus, instead of using 5 beams with 408 ends each, use 4 beams with 510 ends each. But in doing this, a smaller number of linear yards can be put on each beam, and hence the slasher set would run out oftener.

The waste on beams themselves would be about the same per cent. (of total yarn sized) in one case as in the other, but the most important item, the waste for each set between creel and loom beam, would be multiplied. Therefore, so far as total waste is concerned, the more warp beams that are used for a given number of ends the better. But there are other practical conditions, such as more handling and more trouble when beams are too numerous, which have made the practice common to put only 400 to 450 ends on a beam. The exact number of ends and exact number of beams are governed, of course, by the number of ends wanted in warp of cloth.

Production.

227. The beam for a 40-inch sheeting loom is about 44 inches between heals. The barrel is 5 inches in diameter and the heads 16 inches. It will hold when level full about 900 yards of No. 20 warp, containing 2.040 ends. Of No. 30 yarn, it will hold 2,000 yards. One set of 5 warp beams with 408 ends each 12,000 yards will fill about 13 loom beams. A common speed for driving pulley of slasher is 200 revolutions per minute. When geared as per Fig. 48, the front roll will run 33.3 revolutions, and deliver 26 yards per minute. This may be reduced to 13 or increased to 52 by shifting the cone belt. It may be reduced to about one-twelfth the above by using the slow motion.

About one loom beam per hour is the average production of a slasher, but may easily be doubled.

One slasher is supposed to be sufficient for about 300 looms.

Coarse yarns must be run through the slasher slower than fine. It requires more time to take up the starch.

Hard twisted yarns are harder to size than soft twisted.

Uniformity in the mixing of size and in the method of running slasher is essential for uniformity in weight of cloth.

General Data.

228. A slasher is usually furnished (at extra charge) with a chain hoist and an overhead track and carriage, running lengthwise over the creel. This is for the purpose of handling the heavy warp beams.

A slasher with one 5 foot and one 7 foot cylinder, with creel for 8 beams, will occupy a space 8 feet wide and 40 feet long. The top of large cylinder will be 8 feet from the floor.

The pulleys are about 16 x 3.

The power required is about 2 horse power.

The weight is about 13,500 pounds.

For the purpose of reducing the cost, slashers are sometimes made with one cylinder instead of two. Where the production required is small, and machines may run very slow, this arrangement works very well.

(Continued next Week)

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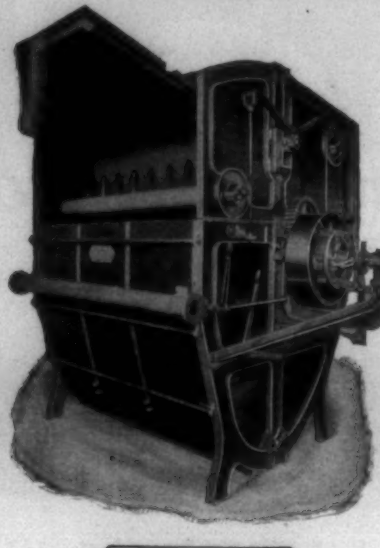

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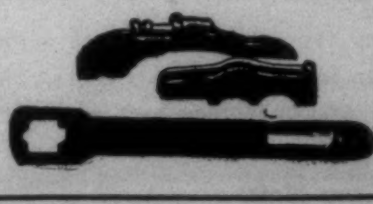

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WRITE FOR SAMPLES
BRISTOL, RHODE ISLAND

Dyeing Rayon

(Continued from Page 14)

Tubize artificial silk may be dyed with the basic dyes and a wide range of shade produced. No mordanting of the skeins is necessary, except when it is intended to dye very heavy shades. For ordinary shades the skeins are well wetted-out and worked for a short time in a bath charged with 3 to 5 per cent acetic acid, together with the necessary amount of previously dissolved dye. Enter the skeins and work at the ordinary temperature for about ½ hour, and gradually increase the temperature to 120° F. turning the skeins until the bath is exhausted.

It must be noticed that in dyeing artificial silk, but constant motion of the skeins or fabrics in the dye-bath is essential to insure level shades. In all cases it is desirable that the dyes used should be previously dissolved and added to the bath through a suitable strainer.

Chardonnet artificial silk (nitro silk) is best ded with basic dyes, for which no mordanting is necessary. This silk is dyed with basic dyes in practically the same manner as tubize artificial silk, making use of 3 to 5 per cent acetic acid and finally exhausting the bath by raising the temperature to 120° F.

Acetyl artificial silk is first subjected to a light scouring bath with 10 per cent soap and 2 per cent soda ash, in a bath heated to 170° F. for ½ hour. Then wash well, and enter the dye-bath prepared with the necessary basic dye and 2 to 4 per cent acetic acid, the bath heated to 100° F. Wash for ½ hour, then slowly raise the temperature to 150° F. and dye until the bath is exhausted.

Average Price of Grey Cloths Declines Slightly

Prices of cotton grey cloth in the world's principal markets in general moved in sympathy with the fluctuations in raw cotton during 1925, and at the end of the year reflected the marked decline in raw-material prices during the last quarters, according to a compilation of international cotton grey-cloth prices by the Textile Division, Department of Commerce. The year, 1925, opened with middling spot cotton quoted at $0.2420 at New York. Although there were minor recessions and recoveries, cotton prices advanced during the first two months of the year, reaching the high mark for 1925 ($0.2605) during the first 10 days of March. During April to September, inclusive, cotton quotations ranged from $0.22 to $0.25, but averaged about $0.24. A marked decline occured during the last quarter, the monthly average dropping from $0.24. A marked decline occurred during the yast quarter, the monthly average dropping from $0.2379 for September to $0.2006 for December. The low level of 1925, ($0.1915) was registered on December 22.

At the beginning of 1925, the average price per pound of eight representative grey cloths in the New York market was a quarter of a cent below that of comparable British cloths in Manchester. This advantage was lost almost immediately and during the first quarter of the year, New York prices averaged fully one-half cent above Manchester. In May and June, quotations on American grey cloths again fell below those of the British cloths, and for the first half of the year, New York prices average a trifle lower than the British, the figures being $0.4802 and $0.4813, respectively.

Since July, the monthly average for British cloths has shown a steady decline, dropping from $0.4616 in that month to $0.4024 in December, while that for American grey cloths advanced from $0.4518 in July to $0.4840 for October, and then fell to $0.4582 in November and to $0.4480 in December. During the second half of 1925, the average for New York was $0.4634 against $0.4361 for Manchester. At the close of the year, the marginal difference between British and American cloths was $0.04 in favor of the former.

The average price per pound of the three grey sheetings and five print cloths used in calculating the New York average declined from $0.4901 per pound in 1924 to $0.4718 in 1924. For the three sheetings, the decrease amounted to about $0.035, but other factors seem to have operated in the print-cloth market, for three of the print cloths registered a decline and the other two an advance, in 1925, as compared with 1924. The rise in the price of the two print cloths—39 inch, 72x76, 4.25-yard and 39-inch, 68x72, 4.75-yard—apparently represents an adjustment of values, inasmuch as these two items in 1924 showed a greater percentage of decrease from 1923 than did the other print cloths.

Converted at the par value of the pound sterling, the annual average of the six grey shirtings and two printers, on which Manchester prices are compiled, declined from $0.5111 per pound in 1924 to $0.4622 in 1925. The appreciation of the pound sterling, however, practically offset the reductions in prices, and converted at the current exchange rates, the figures were $0.4630 in 1924 and $0.4583 in 1925. The highest quotation of the year was $0.4963 for the week ended March 28 and the lowest ($0.3989) was recorded during the the weeks of December 19 and 26. Prices of the individual cloths show increases in some cases and decreasein others, but except for the two printers, the changes are small.

South African Cotton Blanket Industry.

Cotton blankets are to be manufactured in the Union of South Africa, according to current press reports, Trade Commissioner P. J. Stevenson, Johannesburg, notifies th Dpartment of Commerce. This project if successful will curtail imports which at present come principally from Great Britain and Costinental countries. The manufacturers also hope to export blankets to Rhodesia, Portuguese East Africa, and the Belgian Congo. Trade experts, however, point out that the domestic market is for not more than three to six mlilion blankets a year. Further it is pointed out that continntal blankets are made from waste cotton, and that such manufacturing requires highly technical experts and long experience.

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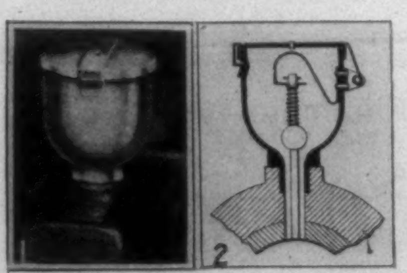

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Some Newer Processes For Modification of Cotton Fabrics

(Continued from Page 12)

used for a first and a second treatment should be of the same strength in both cases. Other modifications of the effects obtainable depend upon the application of more or less tension during treatment; and patterned effects may be produced by printing suitable resists to the alkali or to the acid at different stages (German patent 295816).

The influence of temperature on the results is very great.

It is remarked (English patent 103432) that sulphuric acid at about 107 deg. Tw. exerts a more marked effect on cotton when applied at a temperature of — 4 deg. Cen., or lower, than when applied at the ordinary temperature. This property may be turned to account for the purpose of imparting either a transparency or a wool-like effect to cotton fabrics. The material, ordinary or mercerized, is treated with sulphuric acid of the strength named and at — 4 deg. Cen., with contact for five seconds, washed, and mercerized with caustic soda. The effects may be varied by altering the concentration of the acid and the duration of the treatment.

At temperatures below — 4 deg. Cen. the sulphuric acid, so long as it is below 107 deg. Tw., may be allowed to be in contact with the cotton without causing any tendering of the fibre (English patent 482282).

Another specification (German patent 360326) points out that transparent and silk-like effects may be produced by treating the cotton material first with wash acid and then with stronger acid, and finally mercerizing with caustic soda. The procedure prescribed is: Treating the cotton fabric, under tension, or stretching afterwards, with sulphuric acid 105 deg. to 107 deg. Tw., at the normal temperature, for one to three minutes. The material is then washed and dried in the stretched condition and treated again with sulphuric acid, this time at a strength of 113 deg. to 120 deg. Tw., under tension for three seconds to five seconds at the normal temperature, followed by mercerizing in the damp state in the ordinary manner with strong caustic soda. The material is washed and squeezed between the operations.—Textile Recorder of Manchester, Eng.

Frank Mossberg Company

The Frank Mossberg Company has been reorganized with new working capital, new officers and directors, under the name of Frank Mossberg Corporation.

The financial statement after reorganization shows current assets approximately $220,000 in excess of current liabilities.

For over twenty years this company has been manufacturing wrenches and socket sets for the automotive industry and is the original designer and maker of pressed steel loom beam heads, section and adjustable heads for the textile industry and steel spools and reels for the wire and cable industry.

In addition to these lines, the company also does a very extensive business in special steel stampings of all descriptions.

Pending the reorganization the company engineers have been working out many new and improved features in construction of their textile and wire mill product and their new designs are now ready and many are in actual use the mills.

Lewis R. Smith is president and general manager of the reorganized company and A. A. Underwood, who is one of the pioneers in introducing pressed steel beam heads in the textile mills, is secretary and treasurer.

106 Attend Kaumagraph Dinner

A dinner was recently given by the Kaumagraph Company at the Hotel McAlpin, New York, to commemorate the 20th anniversary of the company.

The striking growth of the company in the last few years was indicated by the number in attendance at the dinner. Places were set for 106 kuests, all of whom are members of the Kaumagraph organization. It was recalled that at the dinner held a few years ago to commemorate the 15th anniversary, there were only 42 members of the organization.

The reason back of this phenomenal growth, and progress of the company were discussed in addresses made by Hugh R. Monro, president of the company, and Trowbridge Barston, general manager.

Among other accomplishments of the Kaumagraph Company since its 15th anniversary has been its removal to its own nine story building at 350 West 31st street and the organization of a Lithographic Service Department for lithographing boxes, hosiery packing, etc. In addition, several innovations and improvements in Kaumagraph transfers for trademarking have also been developed in the last few years.

Southern Spinners' Bulletin

The ~~weekly~~ bulletin of the Southern Yarn Spinners Association says:

"The general tone of the market is strong. Spinners asking prices remain firm and in many instances sales are reported to have been made at an advance over quoted figures. During the past week there has been considerable demand for carded weaving yarn in various numbers and sales of considerable volume have been reported as consummated. With the stiffening in the cotton market and the gradual advance in price, it is reasonable to expect that yarn prices will show a commensurate increase.

Buyers seem still hesitant to commit themselves to forward purchases although the indications are that the various supplies of cheap yarns have been exhausted and as there are no stocks available prompt deliveries, which appear to be most in demand, are impossible.

The situation at present looks encouraging for good and remunerative business in the near future if production is regulated by demand. An over production at the present time would have a depressing effect on the market.

Some Recent Comment on Editorials

(Continued from Page 8)

sufficient to give information on every one of these questions. It might be possible to find somewhere in the South an administration that allows such conditions in its mill. But we believe it is hardly possible to find such a mill at this time. Something like it, in some places, may have existed twenty-five years ago. At that time there were evils to be corrected. And have they not been corrected by our great mill administration?

This article that The Southern Textile Bulletin is protesting against purports to represent mill conditions as they exist today in the South. How untrue it is the readers of this paper know. Our mill pastors know. The demonstrable truth is that human conditions in our mill villages in South Carolina have improved more rapidly than in any other section of our industrial life. Great attention has been given to the homes, to sanitary conditions, to the schools, to the churches, to recreation, to welfare work, to all question of bodily protection and to working conditions in the mills. The marvelous work along all of these lines has told wonderfully on the improvement of life in our mill villages. There does not exist in America a happier population. It is our information that human conditions in our Southern mill villages surpass those to be found in the industrial population of New England. But we will institute no comparisons.

It is but just to say that the happy conditions to be found in our mill populations have come about from no State or National compulsion. They are the product of the wisdom, the broad-mindedness and the Christian spirit of our mill administrations. We can, of course, speak from personal observation only of our South Carolina mills; but of these our knowledge extends over a quarter of a century and is fairly extensive. What we know is that this department of our industrial life has been blessed with forward-looking men of spiritual as well as business vision. So certainly is this true, and so general, that it has come about that all of our mills now realize that the only way in which to get and to keep the best mill help is to have good human conditions for this help. Evil conditions in a mill in South Carolina make it impossible to hold profitable labor. This is everywhere known.

The day will come when the historian of South Carolina will pay a high tribute to the men who are now over our mills. The very best labor and human ideals obtain, and they obtain because we have over these mills great true Christian business men. Many of these men are leaders in their denominations. A list of them would almost be taken for roll of delegates to a laymen's meeting.

It is not surprising that they keenly feel the fearful injustice done to their industrial communities, communities in which they have a personal pride, by such an article as that whiih appeared in our own Home and Foreign Fields. We feel sure that this good journal will correct the injustice.

The University Investigation

The world is not a perfect place in which to live. Human institutions have not yet attained perfection. In spite of the progress of civilization, we must still concur that our social problems are not all solved; that proverty, disease, insanity, and crime, still exist; that men have not yet learned the art of living together in understanding and peace. In fact, we admit that the millennium has not yet dawned.

And so the professional reformer, the impractical theorist, the Utopican dreamer, and the Bolshevistic agitator find no trouble in discovering conditions that need changing and problems that need solving. Frantically, then they set themselves to the task. But too frequently the result produced is like unto that which would be produced by a blacksmith who perchance set out to repair the delicate mechanism of a watch with a hammer and chisel. Among these various reformers and self-appointed social physicians, are sometimes found honest but deluded persons who believe that the panecea for all social diseases lies in investigations and resolutions There is the socratic idea that knowledge is the source of all good, and that to know good is to do good. Unfortunately this is not true. Society is an organism of long slow growth, and its growth is not affected by the theories of the classroom nor by the publication of many bulletins.

But sometimes pernicious results come from the agitation of investigation. Results may come that the investigator may not epect. Radicalism, nihilism, socialism, sentimentalism may be its fruit. The social investigator must work in a laboratory unlike that of the chemical or the biologist. And to his surprise he sometimes finds that his specimens object to the process of investigation. The University of North Carolina has recently stumbled against such an objection in the refusal of the Cotton Mills of the State to sanction an investigation of mill conditions by students of the university.

This objection on the part of mill owners is by no means unreasonable. The world of business can not afford to be interfered with by a bunch of college students, immature and unprepared by business experience to understand the problems that exist. The farmer would object to such an investigation among his tenants. The merchant would object to such an investigation among his clerks. The private individual would object to such an investigation of his own home. Human institutions and human beings are not specimens to be impaled upon a pin and subjected to microscopic examination.—T. C. Johnson.—Editorial in Cooleemee Journal.

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Important Properties Of Rayon

(Continued from Page 7)

ference in prices between the new product and cotton or wool.

The cotton industry acknowledges the importance of artificial silk and consumes a very large quantity of it in order to continue its own operations and to obtain a product of higher commercial value. The production in plain cotton goods in recent years has been far below capacity, averaging three working days a week, whereas mills specializing in fancy goods using cotton with rayon are running day and night, due to the attractive effects contributed to the new fibre. These new cotton combinations contain up to 30 per cent of rayon, and are used in underwear, shirting, bedspreads, draperies, damasks, brocades with iridescent warps, etc.

Rayon is also used with cotton for ribbons, moire, plush, all kinds of pile fabrics, shoe coverings, cloth gloves, umbrellas, wire insulations, coat linings, knit goods, hair nets, elastic webbing, satin, hat and over-hosiery, laces, and embroidery. In Manchester, England, the oldest home of the cotton industry, rayon is being used to a large extent with cotton fabrics, giving them a appearance of knitted goods with jacquard effects. Cotton warp with rayon filling is very popular.

Being more resistant to friction than silk, rayon is consequently valuable for linings. It is replacing cotton more and more, because the old supply of long staple cotton has been reduced to a large extent and its price is not different from rayon, which is produced in endless lengths. The domestic crop of long staple cotton has gone, probably never to return, the longest staple on the market now bing 1 3-16 inches. The Egyptian long staple has also been reduced.

Growers of cotton will not be forced out of business by the growth of the rayon industry, but it may reduce the production of cotton, stabilize its price, and establish reasonable profits for the cotton industry. Part of the cotton production, namely the short linters, may find its place in the rayon industry as raw material.

Some authorities claim that cotton will be replaced in the future by rayon. However, this expectation has no foundation, considering the present stage of the development of this young industry. Should this ever take place, it will not be in a revolutionary way, but by means of slow adaptation and chemical evolution in the generation to come. It it more probable that the agricultural conditions of the country will be adjusted. The supply of wood for pulp may be exhausted unless a radical reforestation policy is established. It would also be beneficial to cotton growing if the reforestation of the cotton belt was encouraged, thus better protecting the parts of land used for cotton. Another solution to the problem of competition between cotton and rayon would be the finding of better methods of mercerization to increase the value of cotton. Cotton is an ideal raw material, but there ought to be still more possibilities from a chemical standpoint to improve its manufacture.

Every year the uses of rayon extend into new fields. For example, silk hosiery is the largest consumer, but increasing amounts are being used also by the broad silk, cotton, and woolen goods mills, where artificial silk yarns are twisted together with other threads to give luter and variety to materials. Rapidly growing in volume is its use in knitted cloth for underwear, dresses, and sweaters. It also found entrance in connection with rubberized cloth for surgical dressings, in automobile tire fabrics, in trimmings, and, being a poor conductor of electricity, it is used for insulating purposes on electric magnetos and wires.

Silk always remains a luxury, but rayon is within the reach of everyone. It is durable. Due to its high elongation, it stretches more when worn for a long period of time; but since the modern desire of the fair sex is not durability, as was the case in our grandmother's day, but is instead the appearance of the garment, this advantage is disregarded. The fibre brings new effects, due to its beautiful gloss and draping qualities.

In connection with silk, it is used to a large extent in the manufacture of broad silk, brocades, and ribbons. In 1923, at the International Silk Exposition in New York, 80 per cent of all silk exhibits contained artificial silk. In the near future, 80 per cent of all textile goods will be mixed with rayon. The knit goods industry depends almost entirely today on rayon in the manufacture of sweaters, jumpers, scarfs, shawls, and neckties, and to a large extent for hosiery and different kinds of underwear.

In the weaving industry it is used for crepes and mousselines, mixed with silk, cotton or wool. It is used alone or in combinations for embroideries, laces, tapestries, wall paper, and rugs. It is mixed with wool for the production of fur imitations, plush and velvetin. Artificial silk waste is carded, combed and spun with wool or used alone for fringes, tassels, button coverings, and felt. The wool industry recently overcame weaving difficulties of mixed yarns consisting of rayon and wool, and now a new field is open to this industry.

Further use is for the skeletons of gas mantles, electric cords, toys, artificial hair, millinery purposes (alone or with metallic cloth), artificial horse hair, and artificial straw (known on the market as "visca"). In England the cable manufacturers are considering the use of rayon for insulation instead of silk and cotton, after a study of many years of the insulation properties of rayon. These roughly indicate the various textile uses of rayon at the present time.

One of the most striking advantages of rayon, especially of the viscose product, is the dyeing quality. Viscose silk takes the substantive or basic colors, the later with or without mordant, very uniformly, and the brilliant colors are a very important property of this product. The other kinds of rayon are dyed in a similar way. The only exception is the acetyl cellulose product, which behaves like wool regarding the affinity to dyes and will take only special dyestuffs.

Cotton and rayon can be dyed the same depth of shade. They have a similar affinity for the same dyestuffs; but in light shades, cotton has more affinity, while in dark shades rayon has more, even when the same dyestuffs are used. Vit colors are being used more and more; for, while their cost is higher, in the long run the fast dyes applied to rayon fabrics are giving fdll satisfaction.

Artificial silk can be dyed in skeins or in piece goods. Dyed in the piece, especially if mixed with other yarns, wonderful color combination are obtained by cross dyeing; and due to the great affinity of rayon to dyestuffs, many inferior kinds of dyes may be used. On account of the great affinity to any kind of quality of dyes, this industry supports the young but very important dyestuff industry of this country. If dyed in fabrics made of cotton and rayon, or made of two different types of rayon, and dipped in a bath containing two different dyes, two or three color effects are obtained simultaneously. This type of dyeing is known as cross dyeing, and is applied to brocades and other fabrics.

Very often combinations made in this way give the fabric a black or dark warp, while the filling is made of alternating rows of two different kinds of rayon having different shades. The result is a rich fabric, striking in its depth of color and beauty of design. It is used for expensive gowns and men's ties. Cross dyeing of two or three color designs on different kinds of rayon can be obtained by mixing, for instance, viscose and acetate or by mixing rayon with silk or wool. Very striking effects are obtained in the printing of rayon alone or in combination.

Another item of importance in the future development of rayon will be a close cooperation with the dyestuff industry whereby an understanding ought to result to the mutual benefit of the industries involved.

Rayon may be identified by its chemical and physical properties. If mixed in fabrics and highly sized with silk or cotton, it must be washed, the oil extracted, and the fibre boiled in water before the test can be made. The simplest test is by combustion. Cellulose silk burns wtih a flame like cotton, paper, or other vegetable fibre. The burning is odorless and leaves no residue, with the exception of a small amount of ash; whereas silk or wool and all other kinds of animal fibres smoke without burning, giving off a disagreeable odor of burnt horn and leave a charred residue. Rayon made of acetyl cellulose burns without odor and also leaves a charred residue. The combustion gases of animal fibres are alkaline to moistened litmus paper; the gases from artificial silks are acid. With a 40 per cent solution of caustic soda, silk and wool dissolve immediately while rayon swells slightly without going into solution. Different kinds of rayon may be identified by treatment with pure concentrated sulphuric acid and ioidne. Nitrocellulose, under this treatment, dissolves with a purple color; cuprammonium with a light blue color; acetyl cellulose, with a yellow color; and viscose rayon, with a dark blue.

Southern Mills Using Celanese

(Continued from Page 10)

Celanese fabric takes up water by capillary attraction and this water is thrown off by evaporation, insuring the wearer a dry garment at all times.

Celanese has remarkable cross-dyeing properties. For example, when a plain weave dress fabric of cotton warp and Celanese filling is dyed in a bath of two colors, the cotton takes up one color and rejects the other, while Celanese takes up one colors and repels the other. It is a simple matter to dye and finish goods from Celanese yarns. The initial difficulty experienced in dyeing the fibre has long since been overcome, an entire new series of dyes, especially adapted to Celanese, having been evolved. These SRA dyes, as they are desiginated, yield very rich colors in every conceivable shades. They have exceedingly level dyeing properties and are fast to sunlight, washing, perspiration and salt water. In addition, they have the added advantage of having little if any affinity, for silk, cotton, rayon or wool. Hence they give excellent results in cross-dyeing.

The SRA colors for dyeing Celanese and the CR colors which dye cotton and leave Celanese white and the CR wool and silk colors, which dye these two fibres and leave others white are sold for the convenience of Celanese users by the American Cellulose and Chemical Manufacturing Company. It is also interesting to note that most of the American dyestuff manufacturers are now offering special groups of cotton colors which leave Celanese white and several companies are now bringing out a special class of colors in powdered form for dyeing Celanese and leaving other fibres white. Due to the increase in the use of Celanese yarns and the increase increase in demand for dyestuffs to use with them, the various dyestuff manufacturers are devoting their attention to these new classes of colors and are constantly making new discoveries which are enabling them to offer to the consumer, new colors as well as valuable information in regard to dyeing Celanese and cross dyeing with other fibres.

Celanese yarns are made in America by the American Cellulose and Chemical Company. Their main offices are in New York and the plant is at Amcelle, Md. The Southern offices are located in the Johnston Building, Charlotte, in charge of Todd B. Meisenheimer.

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Cotton Goods

New York—Cotton goods markets were rather active during the week. In gray goods lines, print cloths, sheetings and convertibles were firm, and showed a tendency toward higher prices. Goods for spot delivery were reported scarce in many constructions. Sales for the week were moderately large, both for nearby and future delivery. Mills are well sold for the first three months of the year. Sheetings sold well in moderate lots and many sellers refused bids of at prices slightly under current quotations. The advance in the cotton market was well supported through the week and reflected increase strength in the goods markets.

There was a better demand for fine goods. Most of the business done was either for spot or January delivery. There were some sales of carded broadcloths, 90x60s for February delivery at 12½ cents. Business in finished goods generally was considerably better, although wholesalers are still trying to restrict their buying to the smallest possible quantities. Wash goods and dress goods moved better and were firm in price.

There was a slightly better demand for combed broadcloths and further interest was noted in fancy shirtings in dobby patterns. There were a number of sales of warp stripe sateen in both carded and combed construction. Contracts for other fine goods were also reported, including, marquisettes, which have been selling well during the past week. Rayon and cotton mixed fabrics continued in good demand.

In the coarse colored goods, there was a better movement in denims, ginghams and chevoits. Bleached goods were more active and sales of printed goods were larger. Domestic, shirtings and combed goods sold well in moderate quantities.

Cotton duck was firmer and actual business was larger during the preceding week. The best demand was for numbered duck. Army duck was quoted at 45 cents, with 44 cents reported on some lines.

There has been fair recent business in sateens, and the market on the 4.37s has strengthed considerably. Fall River sold goods at 12¼ cents, and the reports are that this has become the best there. Some Southern goods has sold at 11⅞ cents, and another make had brought 12 cents. One Eastern make of 37½ inch, 64x88, 4.70 yard had sold at 11¼ cents.

Buyers are finding it difficult to obtain spot and nearby goods in the Fall River print cloth market and on some styles mills are refusing prices which have been acceptable in the near past. This is especially true with regard to 4.37 sateens which which are in demand today. Some sales were reported at 12 cents the early part of the week with 12¼ also paid but the latter price is now generally the basis.

Some good sized orders of 36-inch cloths continue to be put through, and wide and narrow odd styles have been in request. A good demand has been noted for wide standard styles and here again spots are becoming hard to obtain. In narrow widths business has been reported in 25-inch 40x32, 14.75 at 3⅛.

Cotton goods prices were as follows:

Print cloths, 28-in., 64x64s	6½
Print cloths, 28-in., 64x60s	6¼
Print cloths, 27-in., 64x60s	6
Gray goods, 38½-in., 64x64s	9¼
Gray goods, 39-in., 68x72s.	10⅜
Gray goods. 39-in., 80x80s..	12¼
Brown sheetings, 3-yard...	12½
Brown sheetings, 4-yard...	10½
Brown sheetings, stand.....	13½
Ticking, 8-oz.	22
Denims	17½
Staple ginghams, 27-in.....	9
Kid finished cambrics.....	9 a10
Dress ginghams	13½a17½
Standard prints	9½

Rayon to be Manufactured at Bristol, England.

A company producing rayon has acquired a mill which has been manufacturing cotton goods at Bristol but which has been in financial difficulties for some time and at present employs only 600 operatives, Consul S. R. Thompson, Bristol, reports to the Department of Commerce. As soon as the necessary changes can be made in the plant, the production of rayon will be begun, according to press reports. It is estimated that from 2,000 to 3,000 hands will be employed by the new plant.

Indian Market for American Cotton Cloth.

The Indian demand for American fancy goods, voiles, prints, etc., has become much more apparent in the past few months, doubtless stimulated by more favorable exchange rates, according to a report from Assistant Trade Commissioner D. C. Bliss, Bombay, to the Department of Commerce. American firms are probably justified in continuing their policy of caution in dealing with many of the smaller Indian houses, but it is felt that it might be well worth while for an exporter to make serious efforts to obtain orders from the larger and better equipped distributing agencies.

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The Yarn Market

Philadelphia, Pa.—There was considerable improvement in the yarn market last week. Strengthening cotton prices had a good effect on the yarn trade and yarn quotations were firmer at slightly higher figures. There was a good demand for spot and prompt delivery all through the week and an appreciable increase in the number of sales for future delivery. While no great amount of business involving large contracts has yet been done, the developments of the week were encouraging and inquiry was broad. Buyers were inclined to move cautiously, but showed much more interest in the market and there are many indications that a very good buying movement is ahead.

The price situation still shows some irregularity, but dealers prices are more nearly in line with spinners quotations than has been the case in some time. Mills are well sold ahead and as a rule refused to take orders at prices under the markets and at the same time there was considerably strengthening of prices quoted by the dealers.

There was an encouraging improvement in the demand for carded weaving yarns. Sales from day to day, involving small lots, produced a very good total for the week. Carded weaving yarns were also in good requests for prompt shipment. The dealers asserted that a very much larger business could have been done in yarns for prompt and spot delivery had stocks been available. Many numbers were reported scarce for promt shipment and stocks generally at the mills and in the market were reported low.

Combed yarns continued strong and firm in prices. Mills have booked enough business to keep them busy for some time to come and spinners are not anticipating any weakness in the price situation. Mercerized yarns were in good demand and prices were very firm.

The following prices show sales by dealers, and are generally under spinners quotations:

Southern Two-Ply Chain Warps.

8s	34½a--
10s	35½a--
12s	36½a--
16s	37 a--
20s	38½a--
24s	41½a--
26s	43 a--
30s	44 a44½
40s	55½a56
50s	65½a66

Southern Two-Ply Skeins.

8s		33½a--
10s		34½a--
12s		35½a--
14s		36½a--
16s		37 a--
20s		37½a38
24s		40½a--
26s		42 a42½
30s		43½a--
36s		51½a--
40s		52½a53
40s	ex.	56½a57
50s		64½a65
60s		71½a--
Tinged Carpet	3 and 4-ply	31½a--
White Carpet	3 and 4-ply	33½a34

Part Insulated Waste Yarns.

6s,	1-ply	29 a--
8s,	2, 3 and 4-ply	30 a30½
10s,	1-ply and 3-ply	32½--
12s,	2-ply	33½a--
16s,	2-ply	35½a--
20s,	2-ply	36½a--
26s,	2-ply	41 a41½
30s,	2-ply	42½a--

Southern Single Chain Warps

10s	34½a--
12s	35½a--
14s	36½a--
16s	37½a--
20s	38½a--
24s	40½a--
26s	41½a--
30s	43½a--
40s	54½a--

Southern Single Skeins.

6s	33½a--
8s	34 a--
10s	34½a--
12s	35½a--
14s	36 a--
16s	37 a--
20s	37½a--
22s	39½a--
24s	40½a--
26s	41½a42
30s	43½a44

Southern Frame Cones

8s		33½a--
10s		34 a--
12s		34½a--
14s		35 a--
16s		35½a--
18s		36½a--
20s		37½a--
22s		38 a--
24s		39½a40
26s		40½a41
28s		42 a--
30s	Tying in	40½a41
30s		42 a44
40s		51 a52

Southern Combed Peeler Skeins, Etc.—Two-Ply.

16s	56 a60
20s	58 a62
30s	65 a67
36s	75 a80
40s	80 a85
50s	87½a90
60s	90 a95
70s	1 05a1 10
80s	1 18a1 20

Southern Combed Peeler Cones.

10s	48 a49
12s	49 a50
14s	49½a50½
16s	52½a--
18s	51 a52
20s	52 a--
22s	53 a--
24s	56 a--
26s	56½a--
28s	57 a--
30s	60 a--
32s	62 a--
34s	65 a--
36s	72 a--
38s	74 a--
40s	75 a--
50s	80 a--
60s	90 a95
70s	1 05a--
80s	1 15a--

Eastern Carded Peeler Thread—Twist Skeins—Two-Ply.

20s	50 a--
22s	51 a--
24s	56 a--
30s	59 a--
36s	63 a--
40s	65 a--
45s	70 a--
50s	75 a--

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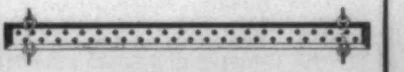

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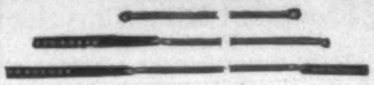

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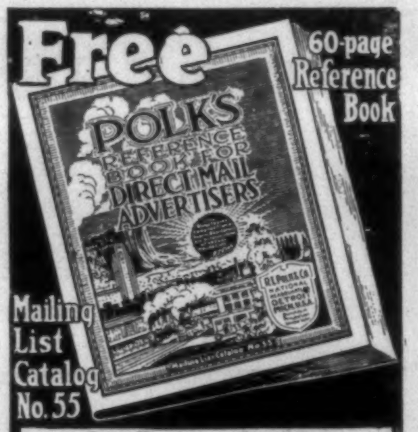
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Want man for superintendent and local manager for small mill on coarse yarns. Expect to install looms. Mill is practically new and is modern and splendidly equipped in every respect. When reorganized will have low capitalization and no indebtedness. Applicant must be in position to take at least $10,000 stock, the proceeds of which will be used as working capital. Other officers are taking stock for same purpose. It is a splendid opportunity for right man. Address "Yarn Mill," care Southern Textile Bulletin.

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During the three months' membership we send the applicant notices of all vacancies in the position which he desires and carry small advertisement for two weeks.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern Textile Industry.

WANT position in mill office as book keeper, auditor, paymaster or cost accountant. Would take place in superintendent's office. Full graduate from textile school and have considerable mill experience. No. 4734.

WANT position as overseer fancy cloth room or finishing department. Have had 18 years experience in finishing room, including experience on chambrays and ginghams. Good references. No. 4735.

WANT position as overseer of carding or spinning. Reliable man of long experience who can furnish satisfactory references. No. 4736.

WANT position as overseer weaving on sheetings, print cloth, drills, duck, or osnaburgs. Eight years as night overseer and sceond hand in large mill. I. C. S. graduate in warp preparation and plain weaving. Age 39. Married, sober, now employed. Good references. No. 4737.

WANT position as master machanic. Experienced on both steam and electric drive and am hard worker who can run your job right. References. No. 4738.

WANT position as master mechanic or machinist Steam or electric drive, can handle turbines, engines, generators and am first class all around man. No. 4739.

WANT position as superintendent of yarn or cord fabric mill. Age 33, married, have been with large mill for past 8 years, 3 years as assistant superintendent. Good reasons for wanting to change and can give good references. No. 4740.

WANT position as superintendent or overseer carding in large mill. Long practical experience and can give first class references. No. 4741.

WANT position as overseer spinning in good mill. Can come on short notice. Experienced. reliable man of good habits and character and can give suitable references. No. 4742.

WANT position as overseer carding or spinning, or assistant superintendent of yarn mill. Long experience and can furnish references to show character and ability. No. 4743.

WANT position as overseer carding and spinning or second hand. Have had several years experience. Am I. C. S. graduate. Age 30, references. No. 4744.

WANT position as overseer of carding spinning with good Southern mill. Experience and training qualify me as first class man in every respect. No. 4745.

WANT position as superintendent, carder or spinner. Prefer North or South Carolina. Now employed. First class references. No. 4746.

WANT position as overseer weaving. Experienced on wide variety of goods and can run the job in thoroughly competent and satisfacotry manner. No. 4748.

WANT position as overseer spinning, twisting and winding. Excellent references to show long record of satistory serivce. No. 4749.

WANT position as superintendent of small mill or carder and spinner in larger one. Experienced reliable man who can give first class references to show character and ability. No. 4750.

WANT position in slashing, drawing-in spooling or warping department. Am young man, I. S. C. graduate and can keep production up and seconds down. Good references. No. 4751.

WANT position as master mechanic; 15 years experience in mill steam plant and machine shops. Can furnish good references from previous employers. No. 4752.

WANT position as superintendent of cloth mill. Long experience on many fabrics and can get results. Fine references. No. 4753.

WANT position by practical weaver of long experience. Have been overseer for past two years, also second hand for four years. Understand plain, dobby and box weaving. Best of references. No. 4754.

WANT position as overseer spinning or would take good second hand's place. Long experience and good references to show character and ability. No. 4755.

WANT position as overseer weaving, 21 years experience in mill, 11 years in weaving. Age 36, married, now employed. Can furnish good references. No. 4756.

WANT position as overseer plain weaing, or would consider place as second hand in large mill. Have had about 20 year's experience, mostly on plain weaving. Good references. No. 4757.

WANT position as carder, spinner or both. Now employed as spinner. Have had 25 years experience in carding and spinning, 10 years as overseer. Good habits and can give good references. No. 5758.

WANT position as carder or spinner in large mill or superintendent of smaller mill. Would like opportunity to submit references showing my record. No. 4759.

WANT position as overseer carding. Can run any card room and run it right. Best of references from past employers. Can come on short notice. No. 4760.

WANT position as carder or spinner or either, pay to be at least $36 weekly. Can come on short notice and give references to show ability and character. No. 4761.

WANT position as superintendent of yarn mill or mill on plain weaving. Now employed as overseer carding but am capable of running mill. Good references. No. 4762.

WANT position as master mechanic, maintenance engineer, superintendent of power or general mechanical superintendent. Thoroughly qualified by training, experience and ability to take complete charge of your power problems. No. 4763.

WANT position as overseer carding; 25 years experience in some of the best mills in the South. Can give excellent references as to character and ability. No. 4764.

WANT position as master mechanic. Long experience in both steam and electric power work and can handle machine shop in first class manner. Best of references. No. 4765.

WANT position as superintendent of small yarn mill or tire duck plant. Superintendent for past 6 years, 14 years experience on cord and tire duck. My references are unusually good and from well known mill men. No. 4766.

WANT position as superintendent of yarn. Qualified by experience and training to handle either in satisfactory manner. No. 4767.

WANT position as roller coverer. Now employed, but wish to change. Can do first class work in every respect. Good references. No. 4768.

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  - Arabol Mfg. Co.
  - Arnold, Hoffman & Co., Inc.
  - Bosson & Lane.
  - Hart Products Corp.
  - E. F. Houghton & Co.
  - A. Klipstein & Co.
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  - Seydel Chemical Co.
  - Seydel-Woolley Co.
  - L. Sonneborn Sons, Inc.
  - Wolf, Jacques & Co.
- **Cotton Waste Machinery—**
  - Woonsocket Machine & Press Co., Inc.
  - Saco-Lowell Shops.
  - Whitin Machine Works.
- **Counters (Revolution, Hank, Pick, etc)—**
  - The Root Co.
- **Couplings (Shaft)—**
  - Charles Bond Company
  - William Sellers & Co., Inc.
  - Wood's T. B. Sons Co.
- **Cranes—**
  - Link-Belt Co.
- **Dobby Chain—**
  - Crompton & Knowles Loom Works.
  - Rice Dobby Chain Co.
- **Doffing Boxes—**
  - Rogers Fibre Co.
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  - Textile Finishing Machinery Co.
  - Universal Winding Co.
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  - Metallic Drawing Roll Co.
- **Drink Fountains—**
  - Puro Sanitary Drinking Fountain Co.
- **Drives (Silent Chain)—**
  - Charles Bond Company
  - Link-Belt Co.
  - Morse Chain Co.
- **Drop Wires—**
  - Crompton & Knowles Loom Works.
  - Draper Corporation.
  - Hopedale Mfg. Co.
  - Mossberg Pressed Steel Corp.
  - R. I. Warp Stop Equipment Co.
- **Dryers (Centrifugal)—**
  - Roy & Son Co., B. S.
  - Tolhurst Machine Works.
- **Dyers—**
  - Southern Artsilk Bleach & Dye Works, Inc.
- **Dyeing, Drying, Bleaching and Finishing Machinery—**
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  - American Laundry Machinery Co.
  - H. W. Butterworth & Sons Co.
  - Franklin Process Co.
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  - Perkins, B. F. & Sons, Inc.
  - Rodney Hunt Machine Co.
  - Textile Finishing Machinery Co.
- **Dyestuffs and Chemicals—**
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  - A. Klipstein & Co.
  - National Oil Products Co., Inc.
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  - General Electric Co.
  - Westinghouse Electric & Mfg. Co
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  - Charles Bond Company
  - Fairbanks-Morse Co.
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  - Chicago Fuse Mfg. Co
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  - Tolhurst Machine Works.
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  - Page Fence and Wire Products Assn.
  - Wickwire Spencer Steel Co.
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  - B. F. Perkins & Son, Inc.
- **Finishing Machinery—**
  - ——See Dyeing, Drying, Bleaching and Finishing.
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  - Whitin Machine Works.
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  - Southern Spindle & Flyer Co.
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  - Steel Heddle Mfg. Co.
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  - See Clutches.
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  - Chicago Fuse Mfg. Co.
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  - Dan Gear Co.
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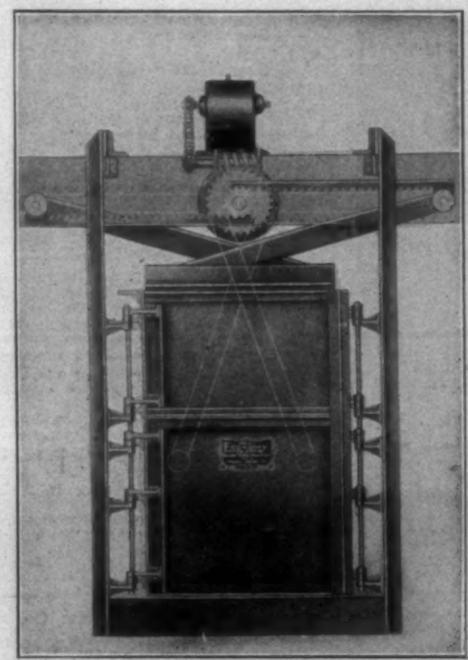

This Economy yarn baling press is unquestionably the last word in baling press development.

Chamber completely inclosed—no openings. The chamber is made up of four sets of doors, so that the ends of the chamber open as well as the sides. The four doors, however, lock at two corners by a very simple locking device.

This new yarn press produces a bale 36" long by 24 wide, of 12 to 15 cubic feet, weighing about four hundred pounds and over making it possible to produce bales 24 to 36 inches deep, weighing from two hundred and fifty to four hundred pounds and over. Chamber five feet deep. Equipped with a directly connected electric motor capable of pulling up to 10 horse torque, alternating current 2 or 3 phase, 50 or 60 cycle. 220 or 550 volt.

The end doors as well as the sides swing out independently, leaving all four sides of the bale exposed.

We should like very much indeed to confer with you regarding this Economy yarn press, and assure you that you would receive satisfactory service. The users of press are well satisfied with this yarn press, because it is convenient to load with great pressure and rapid in operation. Very substantially constructed.

ECONOMY BALER CO.
Ann Arbor, Mich
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Ashworth Brothers, Inc.

Tempered and Side Ground Card Clothing

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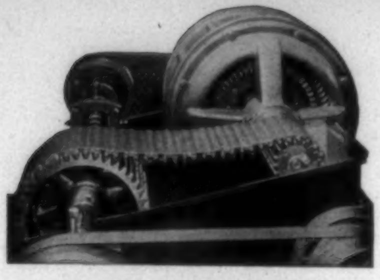

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Textile Chain Drives
MORSE CHAIN CO., ITHACA, N. Y., U. S. A.

There is a Morse Engineer near you

ATLANTA, GA., 702 Candler Bldg., Earl F. Scott & Co.; BALTIMORE, MD., 1402 Lexington Bldg.; BIRMINGHAM, ALA., Moore-Handley Hdwe. Co.; BOSTON, MASS., 141 Milk St.; CHARLOTTE, N. C., 404 Commercial Bank Bldg., CHICAGO, ILL., 112 W. Adams St.; CLEVELAND, OHIO, 421 Engineers Bldg.; DENVER, COLO., 211 Ideal Bldg.; DETROIT, MICH., 7601 Central Ave.; LOUISVILLE, KY., 516 W. Main St., E. D. Morton Co.; MINNEAPOLIS, MINN., 413 Third St., Strong-Scott Mfg. Co.; NEW ORLEANS, LA., 521 Baronne St., A. M. Lockett Co.; NEW YORK, N. Y., 50 Church St.; OMAHA, NEB., 727 W. O. W. Bldg., D. H. Braymer Equipment Co.; PHILADELPHIA, PA., 803 Peoples Bank Bldg.; PITTSBURGH, PA., Westinghouse Bldg.; SAN FRANCISCO, CALIF., Monadnock Bldg.; ST. LOUIS, MO., 2137 Railway Exchange Bldg.; TORONTO, 2, ONT., Canada, 50 Front St., E., Strong-Scott Mfg. Co.; WINNIPEG, MANITOBA, Canada, Dufferin St., Strong-Scott Mfg. Co.

MORSE SILENT CHAIN DRIVES

THE MORSE "ROCKER JOINT"

PULLEYS HANGERS

The T.B. WOOD SONS CO. Line

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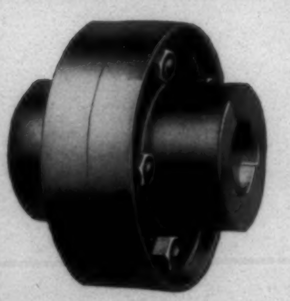

Designed to withstand severe lineshaft service. Flanged to protect the workman from being caught on the bolt heads or nuts. Machined all over to template, making them interchangeable and therefore easily duplicated.

Interchangeability is a feature that has made THE T.B. WOOD SONS CO. LINE of Power Transmission Machinery the standard in so many of the country's largest plants. Catalogue on request.

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Motor Pulleys Flexible Couplings, Speed Reducers and the U. G. Automatic Belt Contactor for Short Center Drives.

POWER TRANSMITTING MACHINERY

FIG. 27

LANE
Patent Steel Frame
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